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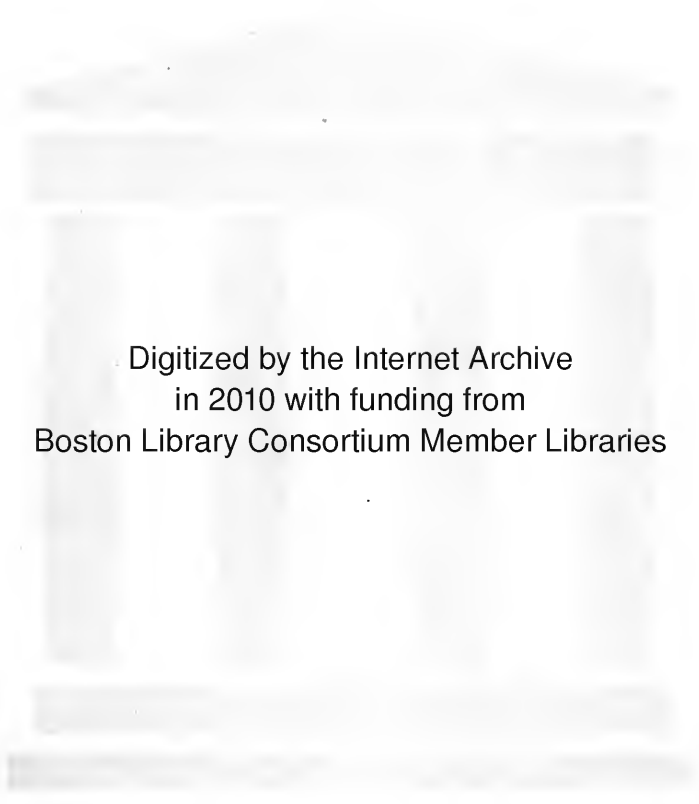
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COMMONWEALTH OF MASSACHUSETTS
DISTRICT POLICE REPORT

1914



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REPORT OF THE CHIEF
OF THE
MASSACHUSETTS DISTRICT POLICE,
FOR THE
YEAR ENDING OCT. 31, 1914,
INCLUDING THE
DETECTIVE, BUILDING INSPECTION AND BOILER
INSPECTION DEPARTMENTS.



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The Commonwealth of Massachusetts.

OFFICE OF THE CHIEF OF THE DISTRICT POLICE, STATE HOUSE,
BOSTON, MASS., Jan. 1, 1915.

To His Excellency DAVID I. WALSH, *Governor, The Commonwealth of Massachusetts.*

SIR:—I respectfully submit to Your Excellency my eighth annual report of the official work performed by the members of this Force during the twelve months ending Oct. 31, 1914, such report being made in accordance with the provisions of the Revised Laws, chapter 108, which require that the Chief of the District Police shall make an annual report in print to the Governor of the Commonwealth on or before the first day of January. I also respectfully submit therein such suggestions and recommendations as, in my opinion, should be adopted in order to more fully insure the effective performance of the many important duties imposed upon the members of the respective departments of the Force.

REPORT.

In the following report, with the assistance of the various reports of the deputy chiefs and members which are included therein, I have endeavored to embody such data as will demonstrate, in so far as is possible by such method, the work accomplished during the year by the three departments of the Force.

It is the primary duty of the respective departments to enforce the provisions of certain laws and regulations as follows:—

The Detective Department.—The laws relating to the prevention, detection and punishment of crime; the laws relating to the investigation of every fire occurring in the city of Boston, and of all fires of an incendiary or unknown

cause occurring in the remaining cities and towns of the Commonwealth; and the laws and regulations relating to the keeping, storage, use, manufacture, sale, handling and transportation of certain explosives and inflammable fluids and compounds, and of fireworks and firecrackers, in the cities and towns outside of the metropolitan district.

By the provisions of section 1, chapter 577, Acts of 1914, the Chief of this Force is authorized to expend, under the direction of the Governor and Council, a sum not to exceed \$12,000 to purchase and maintain a boat to be used in the enforcement of law and the prevention of crime in the waters of the Commonwealth; and by the provisions of section 2 of such Act, the Governor is authorized to appoint one additional member of the detective department who may be detailed for such duty. In accordance with the provisions of section 1, I, as Chief of this Force, applied for bids to furnish a boat for such service, and received three bids, one of \$9,000, one of \$5,000 and one of \$2,500. As in my opinion the boat represented by the bid of \$9,000 was the only one of the three boats that would be fitted for the service required, I so reported to Your Excellency and the Honorable Council, with the request for the approval of such expenditure. The Honorable Council, however, did not approve of the expenditure of this amount, and I made further investigation in relation to the boat the price of which had been quoted at \$5,000, and found that before such boat could be placed in condition for the service required, a further expenditure of \$3,950 would be necessary, making a total cost for this boat of \$8,950. I reported these facts to Your Excellency and the Honorable Council under date of July 27, 1914, and under date of July 31, was advised that my request for authority to purchase this boat and to make the necessary alterations was indefinitely postponed; the appropriation has, therefore, not been expended. In consequence of the boat not having been purchased, Your Excellency has not made the appointment authorized by section 2 of the Act, as above referred to.

The Building Inspection Department. — The building inspection laws of the Commonwealth relating to the erection,

alteration and inspection of buildings (outside of the city of Boston), such as public or private institutions, school-houses, churches, theatres, special halls, public halls, miscellaneous halls, places of public assemblage, factories, workshops, etc., and the regulations pertaining thereto; the law and regulations governing the installation, alteration and inspection of elevators in the cities and towns of the Commonwealth not having a building department or an inspector of buildings; and the laws and regulations relating to the operation of the cinematograph and to the exhibition of motion pictures.

The Boiler Inspection Department. — The law relating to the operation and inspection of steam boilers and the rules pertaining thereto, formulated by the Board of Boiler Rules; the law relating to the licensing of engineers and firemen; the law relating to the licensing of operators of hoisting machinery when the motive power is mechanical and other than steam; the law relating to the construction and inspection of tanks containing compressed air for use in the operation of pneumatic machinery and the regulations pertaining thereto, as prescribed by the Board of Boiler Rules; and the law relating to safety valves as applied to ammonia compressors and the rules pertaining thereto, formulated by the Board of Boiler Rules.

Some idea of the nature and extent of the various duties imposed upon the members of this Force may be obtained by reference to the statutes defining them, as detailed above, and by the careful reading of the reports of the inspectors hereinafter given; but an adequate idea of the vast amount of labor performed cannot be obtained therefrom by those persons who are not familiar with the various matters discussed; it is only those who have a practical knowledge of the work entailed in the carrying out of the various duties performed who can fully appreciate the amount of work actually accomplished. That the work of the members of the Force has given general satisfaction to law-abiding citizens of this Commonwealth interested therein is evidenced by the fact that but few complaints have been received by me, and those received have been found upon investigation

to be of a minor character, resulting generally from a misunderstanding on the part of the complainant. On the other hand, I have received many expressions of commendation from the various officials of the Commonwealth and other persons with whom the members of the Force have been brought into contact in the execution of their various duties, attention being especially called to their courtesy, capacity and intelligence.

To intelligently and impartially enforce the various provisions of the statutes coming within their jurisdiction has been the custom and practice of the members of each department, and I am convinced that their efforts have been reasonably satisfactory. In many instances where infractions of the law have been caused through misunderstanding or inadvertence, rather than by criminal intent, a timely notice and warning have resulted in maintaining the dignity and efficacy of the law much better than hasty and ill-considered prosecution would have done; but wherever it has been found that intentional infractions of the law have occurred, the full effects of its power to punish have been brought to bear upon the offenders.

By reference to the statement of Retirements and Resignations which follows, it will be noted that Deputy Chief Frederick W. Merriam of the building inspection department retired from the service of this Force on Aug. 31, 1914, at the expiration of a period of service in such department covering nearly twenty-six years. I desire to take this opportunity to publicly express my appreciation of the support rendered me by this officer during the time he held the position of deputy chief, and also of his record for efficiency and faithfulness during his entire service with the Force. Colonel Merriam is a veteran of the civil war, and was retired, at his own request, under the provisions of chapter 458, Acts of 1907, which provides for a pension to be granted to veterans employed in the service of the Commonwealth.

The detail of the present District Police Force is as follows:—

The Chief, who is in charge of the Force; the first and second clerks; the stenographer to the Chief; six branch office stenographers who perform general clerical duty in six of the branch offices of the Force, one being employed in each of such offices; and the storekeeper.

The detective department, consisting of a deputy chief; a captain, who is in command of the State steamer "Lexington," when such vessel is in commission to enforce the fishery laws, and at other times is assigned to general duty in the department; a chief fire inspector; fourteen detective officers; eleven fire inspectors; one clerk; and three stenographers.

The building inspection department, consisting of a deputy chief; eighteen building inspectors, one of whom is designated by the Chief as supervisor of plans, in accordance with the provisions of chapter 655, Acts of 1913; and two stenographers.

The boiler inspection department, consisting of a deputy chief; twenty-four boiler inspectors; and three stenographers, one of whom, as occasion requires, acts as secretary to the Board of Boiler Rules.

The changes which have occurred in the personnel of the Force during the year are detailed in the following statements: —

RETIREMENTS, RESIGNATIONS, ETC.

NAME.	Position.	Date of Appointment.	SERVICE DISCONTINUED.	
			Date.	Cause.
Adams, Charles, . . .	Building inspector.	Jan. 4, 1905	Jan. 31, 1914	Retired. ¹
Ball, Horace F., . . .	Building inspector.	Apr. 3, 1905	Feb. 19, 1914	Died.
Lynch, Daniel M., . .	Stenographer,	Mar. 23, 1913	Jan. 31, 1914	Resigned.
Merriam, Frederick W.,	Deputy chief, building inspection department.	Oct. 15, 1888	Aug. 31, 1914	Retired. ¹

¹ Retired under Veterans' Retirement Act of 1907, chapter 458.

APPOINTMENTS.

NAME.	Position.	Date of Appointment.	Date commenced Duty.
Gottlieb, Harry, . . .	Stenographer, . . .	Feb. 1, 1914	Feb. 1, 1914
Isele, Ambrose W., . . .	Building inspector, . . .	Apr. 3, 1914	Apr. 3, 1914
Terry, John J., . . .	Building inspector, . . .	Aug. 31, 1914	Sept. 1, 1914

TRANSFERS.

NAME.	From.	To.	Date of Transfer.
Babb, George E., . .	Stenographer, branch office,	Stenographer, boiler inspection department.	Feb. 1, 1914
Cliffe, Sydney H., . .	Industrial inspector, State Board of Labor and Industries.	Building inspector, . .	May 1, 1914
Plunkett, John H., . .	Building inspector, . . .	Deputy chief, building inspection department.	Sept. 1, 1914

ROSTER OF THE FORCE.

JOPHANUS H. WHITNEY, *Chief.*

GEORGE C. NEAL, *Deputy Chief, Detective and Fire Inspection Department.*

JOHN H. PLUNKETT, *Deputy Chief, Building Inspection Department.*

GEORGE A. LUCK, *Deputy Chief, Boiler Inspection Department.*

WILLIAM H. PROCTOR, *Captain.*

CHARLES F. RICE, *Chief Fire Inspector.*

WALTER L. WEDGER, *Expert Assistant.*

DETECTIVE AND FIRE INSPECTION DEPARTMENT.

Detectives.

NAME.	Assigned.	Office.
Barrett, Michael J.,	Tramp officer,	Boston.
Bligh, Thomas E.,	Hampden and Berkshire counties,	Pittsfield.
Bradford, Ernest S.,	Barnstable County,	Hyannis.
Daly, Joseph V.,	Franklin and Hampshire counties,	Northampton.
Dexter, Thomas A.,	Dukes and Nantucket counties,	Edgartown.
Flynn, Frederick F.,	Essex and Middlesex counties,	Lawrence.
Grady, James J.,	Part of Suffolk County,	Boston.
Hardiman, Frank P.,	Part of Suffolk County,	Boston.
Keating, Arthur E.,	Suffolk County,	Boston.
Macksey, James J.,	Bristol County,	Taunton.
Molt, Robert E.,	Worcester County,	Worcester.
Scott, John H.,	Norfolk and Plymouth counties,	Braintree.
Smith, Silas P.,	Middlesex County,	Cambridge.
Wells, Arthur G.,	Essex County,	Lynn.

Fire Inspectors.

Anderson, James,	Hampden and Berkshire counties,	Springfield.
Eustace, Thomas F.,	Part of Suffolk County,	Boston.
Griffin, Richard J.,	Bristol, Barnstable, Dukes and Nantucket counties,	Taunton.
Horrigan, Edward F.,	Middlesex County,	Boston.
Kimball, Arthur S.,	Plymouth and Norfolk counties,	Boston.
McCarthy, Edward J.,	Worcester County,	Worcester.
Murray, William F.,	Essex County,	Lynn.
Murtagh, Edward H.,	Executive Chamber, State House,	Boston.
Nelligan, Maurice P.,	Franklin and Hampshire counties,	Northampton.
Sherlock, Edward J.,	Unassigned, general work,	Boston.
Thompson, Thomas A.,	Part of Suffolk and Middlesex counties,	Boston.

BUILDING INSPECTION DEPARTMENT.

Building Inspectors.

NAME.	Assigned.	Office.
Atkinson, Harry, . . .	Special duty,	Boston.
Beyer, Richard S., . . .	District 5,	Boston.
Cairns, William H., . . .	District 8,	Fall River.
Carey, Jeremiah J., . . .	District 3,	Lowell.
Casey, John F.,	District 10,	Worcester.
Cheney, Ansel J.,	District 1,	Salem.
Cleveland, Ernest E., . . .	District 13,	Springfield.
Cliffe, Sydney H.,	District 15,	North Adams.
Isele, Ambrose W.,	District 11,	Worcester.
Lewis, Elmer,	District 4,	Boston.
McDonald, Angus H., . . .	District 2,	Salem.
McKeever, William J., . . .	District 6,	Boston.
Penniman, Walter A., . . .	District 12,	Worcester.
Pope, Lemuel,	Supervisor of Plans,	Boston.
Roach, Arthur F.,	District 14,	Springfield.
Ryan, Everett E.,	Special duty,	Boston.
Saunders, Frank W.,	District 9,	Fall River.
Terry, John J.,	District 7,	Boston.

BOILER INSPECTION DEPARTMENT.

Boiler Inspectors.

Baxter, Sturgis C.,	District 10,	Boston.
Bragdon, Percy B.,	District 12,	Fall River.
Bushok, Henry,	District 1,	Salem.
DeShazo, James B.,	District 13,	Worcester.
Evans, James W.,	District 8,	Boston.
Ferguson, Charles,	District 5,	Boston.
Forbush, Franklin L.,	District 17,	North Adams.
Harlow, Willis A.,	Special duty,	Boston.
Hinckley, Frank C.,	District 19,	Springfield.
Kearney, John B.,	District 6,	Boston.
Lovering, Arthur F.,	District 16,	Northampton.
Mackintosh, George D.,	District 7,	Boston.
Mitchell, Herbert E.,	District 14,	Worcester.
Moran, Edward,	District 9,	Boston.
Mores, Edward A.,	District 3,	Lowell.
Morton, Harry E.,	Special duty,	Boston.
Ramsay, William W.,	District 2,	Salem.
Richardson, George E.,	District 18,	Pittsfield.
Sanborn, Freeman H.,	District 15,	Springfield.
Simm, Wilbert E.,	Special duty,	Boston.
Skoglund, Charles,	District 4,	Boston.
Sullivan, Herbert A.,	District 11,	Fall River.
Waterman, Benjamin S.,	District 20,	Lowell.
Wright, Franklin G.,	Special duty,	Boston.

CLERKS.

FREDERICK W. MACER, <i>First</i> .		ETTA ^F _M . KENNEDY, <i>Second</i> .
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STENOGRAPHERS.

JOHN W. CARNEY.		ELISE IRISH MORRISON.
MARY DUNN.		MABEL E. NICHOLL.
HARRY GOTTLIEB.	|	ETTA F. REYNOLDS.

STOREKEEPER.

TERRENCE MCSWEENEY.

DETECTIVE AND FIRE INSPECTION DEPARTMENT.

Clerk.

• FRANCIS W. FOGARTY.

Stenographers.

JOHN I. ADAMS.	|	JOHN W. ^F _G ILMARTIN.
FRANK K. HAHN.	|	

BUILDING INSPECTION DEPARTMENT.

Stenographers.

ANNIE R. MAXWELL.		IRVING ^F _B ERTMAN.
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BOILER INSPECTION DEPARTMENT.

Stenographers.

JACOB W. POWELL.		GEORGE E. BABB.
LEWIS P. FALL.	|	

OFFICES.

Central,	. . . . .	Boston,	State House.
Branch,	{	Salem,	12 Kinsman Block.
		Lowell,	71 Central Block.
		Worcester,	476 Main Street.
		Fall River,	Hudner Building.
		Springfield,	21 Besse Place.
		North Adams,	Kimball Block.
		Northampton,	Masonic Building.
		Pittsfield,	Court House.

IN MEMORIAM.

Inspector Horace F. Ball, a member of the building inspection department, died at his home in the city of Worcester on Feb. 19, 1914.

Inspector Ball was born in Worcester on Oct. 14, 1845, and after attending the public schools of that city he entered the employ of Rice & Griffin Manufacturing Company, holding the respective positions of journeyman, foreman and assistant superintendent, and remained in the employ of that company for a period of twenty-one years.

On July 17, 1862, at the age of eighteen years, he enlisted in Company D, 34th Regiment, Massachusetts Volunteer Infantry, and was mustered into the service of the United States July 31, 1862, for three years. He was in active service continuously until the date of being mustered out, July 16, 1865, having been present in thirty-two engagements during that time.

After being mustered out of the United States service, Mr. Ball returned to his employment with the Rice & Griffin Manufacturing Company. He later entered into business for himself, in which business he remained until he was appointed a member of the inspection department of the District Police, March 24, 1905, by Ex-Governor William L. Douglas, serving continuously until the time of his death. He was a brave soldier and a loyal citizen, and the records of this Force show him to have been a faithful servant of the Commonwealth.

RECOMMENDATIONS.

In consequence of the increase in the nature and extent of the various duties imposed upon the departments of this Force, caused principally by the enactment of additional laws from year to year, and also by the increase in population and in the buildings throughout the cities and towns of the Commonwealth and the consequent increase in the number of criminal offences, of fires and of building construction, I have found it impossible to effectively perform such duties with the limited number of inspectors authorized by law; and I therefore conceive it my duty to make the following recommendations for an increase in the number of inspectors in the detective and building inspection departments, respectively: —

At the present time there are but 16 detectives and 12 fire inspectors in the detective department to perform the varied criminal and fire inspection duties throughout the Commonwealth. The time of one detective and a large portion of the time of another has been wholly taken up with the execution of important duties in connection with the different State departments, especially the Attorney-General's department, the Insurance Commissioner's department and the Board of Registration in Medicine. The district attorney of Middlesex County has also found it necessary to request the continuous services of two detectives during the past year, although of late years but one has been continuously employed by that official, additional assistance being rendered him only at such times as requested. The increase in the amount of work which the fire inspectors of this department are called upon to perform is very great, and although from time to time it has been found necessary to detail detectives to assist in this work, we have still found it impossible to perform all that we are called upon to do.

The following comparative statement of the number of fires investigated by this department during the last five years will show a large increase in the amount of work placed upon these officers: —

YEAR.	Number of Fires investigated.
1910,	3,836
1911,	3,992
1912,	4,245
1913,	4,869
1914,	5,074

In addition to the work already referred to, the officers of this department are called upon to supervise the enforcement of the statutes and regulations governing the handling, storage, use, etc., of explosives and inflammable fluids and compounds.

I would, therefore, recommend that six additional inspectors be appointed to the detective department, one to be employed as a detective and five as fire inspectors.

By the provisions of chapter 655, Acts of 1913, being "An Act to revise and codify the building inspection laws of the Commonwealth," a very large amount of additional work was placed upon the inspectors of the building inspection department. Their duties were still further increased by the provisions of chapter 806 of the Acts of 1913, being "An Act relative to the installation, alteration and inspection of elevators, and to the appointment of a board of elevator regulations," it being the duty of the inspectors of this department to enforce its provisions, and the regulations framed by the Board of Elevator Regulations, in every city and town not having a building department or an inspector of buildings. When it is noted that out of the 353 cities and towns of this Commonwealth but 51 have a building department or an inspector of buildings, and that the duty of enforcing the provisions of the law and regulations relating to elevators in the remaining 302 cities and towns of the Commonwealth devolves upon the inspectors of this department in addition to their many other equally important duties, such department consisting of but eighteen inspectors, two of whom are specially detailed for duty in connection

with the enforcement of laws relating to the exhibition of motion pictures, the absolute necessity for an increase in the number of building inspectors will at once be realized. I would, therefore, respectfully recommend that five additional inspectors be appointed to the building inspection department of this Force, in order that such department may more efficiently perform the duties incumbent upon them.

In my last annual report I recommended the passage of an act to authorize an annual appropriation of \$2,500 for the employment of expert assistance in the enforcement of the statutes relative to explosives and inflammable fluids and compounds. In accordance with such recommendation a bill was introduced into the Legislature of 1914, and after favorable consideration was enacted into law upon receiving the approval of Your Excellency, the same being chapter 421, Acts of 1914. Since the passage of this Act it has been found necessary that a laboratory should be provided for the use of the expert employed under its provisions, and an additional amount of \$500 per annum is required to meet the expenses involved in maintaining such laboratory. I therefore recommend that chapter 421, Acts of 1914, be so amended as to read \$3,000 instead of \$2,500 per annum.

The salary of the first clerk of this Force is but \$1,500 per annum, such salary having been established in 1890, twenty-four years ago; and the salary of the second clerk is but \$1,000 per annum, the same having been established in 1891, twenty-three years ago. At the time these salaries were established there were but thirty-six employees in the entire Force, whereas at the present time the number of such employees is ninety-three, being an increase of nearly 200 per cent. This large increase has, of course, produced a proportionate increase in the amount of work the first and second clerks are called upon to perform, and while the salaries above named would appear to be sufficient compensation for the first year of service of said clerks, they are not, in my opinion, sufficient for the continuous service of experienced, efficient and faithful clerks in such responsible

positions, and it would appear but just that the salaries of these clerks should be substantially increased. I therefore recommend that the salary of the first clerk be increased by yearly increments of \$100 until it reaches the sum of \$1,800; provided, however, that such increase is approved, from year to year, by the Chief of this Force for the efficiency and merit of such clerk; also, that the salary of the second clerk be increased by yearly increments of \$100 until it reaches the sum of \$1,300; provided, however, that such increase is approved, from year to year, by the Chief of this Force for the efficiency and merit of such clerk. By the provisions of section 25, chapter 465, Acts of 1905, as amended by chapter 610, Acts of 1913, the Chief of this Force is authorized to appoint a stenographer for duty in the boiler inspection department, who shall also act as secretary to the Board of Boiler Rules, and whose salary shall be \$1,200 per annum. While \$1,200 would appear to be a reasonable compensation for the first year of service of a stenographer performing this duty, it is not, in my opinion, sufficient for the continuous service of an experienced stenographer in such position, and I therefore recommend that the compensation of such stenographer be increased by yearly increments of \$100 until it reaches the sum of \$1,400; provided, however, that such increase is approved, from year to year, by the Chief of this Force for the efficiency and merit of such stenographer.

By the provisions of sections 5 and 6 of chapter 465, Acts of 1907, any person desiring to act as an inspector of boilers, which are under the periodically guaranteed inspection of insurance companies authorized to inspect boilers in this Commonwealth, shall make application to the Chief of this Force to be examined for a certificate of competency, and, if successful, he is granted such certificate; but the certificate continues in force only during the time of his employment by the insurance company by whom he is or is to be employed at the time of making the application. Section 6 also provides that the applicant shall be examined by three members of the boiler inspection department, but no provi-

sion is made that a fee shall accompany the application for examination, notwithstanding that a large amount of work and necessary expense are thereby entailed upon the Commonwealth. It will also be noted that the certificate of competency remains in force only so long as the inspector is employed by a certain insurance company, and becomes void when he leaves the employment of such company, although the result of his examination shows him to be competent to inspect boilers for any duly authorized insurance company. Section 7 of this Act provides that a person who is refused a certificate of competency, or whose certificate is revoked, may appeal from such decision to the Chief of this Force, who shall grant a rehearing by a Board of five examiners, but no limit is placed upon the time within which such appeal shall be made. In consideration of these facts, I respectfully recommend that a fee of \$10 shall accompany each application for examination for a certificate of competency; that the certificate granted shall remain in force and be subject to exchange in the event of the holder thereof being employed by any other duly authorized insurance company than that for which said certificate is originally granted; and that, in the event of an appeal being made, it shall be necessary that such appeal shall be made within a period of one week subsequent to the decision of the Board of Examiners, and that the appellant shall appear for examination on his appeal upon the date stated in the notification forwarded to him, or shall forfeit the right to further examination on his appeal.

RELATIVE TO THE APPROVAL OF ENTERTAINMENTS
HELD UPON THE LORD'S DAY.

One of the most important duties incumbent upon me, as Chief of this Force, is that of approving or otherwise such entertainments as it is desired to hold throughout the Commonwealth on the Lord's day, it being my duty to decide upon each entertainment separately as to whether or not it "is in keeping with the character of the day and not inconsistent with its due observance," and to approve or disapprove such entertainment in accordance with my decision, such duty having been imposed upon the Chief of this Force by the provisions of Acts of 1908, chapter 385, which reads as follows:—

SECTION 1. Section one of chapter ninety-eight of the Revised Laws, as amended by section one of chapter four hundred and sixty of the acts of the year nineteen hundred and four, is hereby further amended by striking out said section and inserting in place thereof the following:—*Section 1.* Whoever on the Lord's day is present at a game, sport, play or public diversion, except a concert of sacred music or a public entertainment duly licensed as hereinafter provided, or a free open air concert given by a city or town or by license of the mayor of a city, or the selectmen of a town, upon a common or public park, street or square, shall be punished by a fine of not more than five dollars for each offence. The mayor of a city and the selectmen of a town may, except as provided in section forty-six of chapter one hundred and six of the Revised Laws, upon written application describing the proposed entertainment, grant licenses for public entertainments to be held on the Lord's day which shall be in keeping with the character of the day and not inconsistent with its due observance, and to which admission is to be obtained upon payment of money or some other pecuniary or valuable consideration, such license to be issued subject to such terms or conditions as the mayor or selectmen may prescribe: *provided, however,* that no such license shall be granted to have effect before one o'clock in the afternoon, nor unless the proposed entertainment shall be approved in writing by the chief of the district police as being in keeping with the character of the day and as not inconsistent with its due observance. Any such license may, after notice and a hearing given by the mayor or selectmen issuing the same, or by the chief of the district police, be suspended, revoked or annulled by them or him. Whoever

offers to view, sets up, establishes, maintains or attempts to set up, establish or maintain, or promotes or assists in such attempt, or promotes, or aids, abets, or participates in offering to view, setting up, establishing or maintaining any public entertainment on the Lord's day, except a concert of sacred music, or free open air concert, as hereinbefore provided, unless such public entertainment shall be in keeping with the character of the day and not inconsistent with its due observance and duly licensed, as herein provided, shall be punished by a fine of not more than five hundred dollars.

SECTION 2. Section one hundred and seventy-two of chapter one hundred and two of the Revised Laws, as amended by section four of chapter four hundred and sixty of the acts of the year nineteen hundred and four, by chapter three hundred and forty-one of the acts of the year nineteen hundred and five, and by chapter two hundred and seventy-four of the acts of the year nineteen hundred and seven, is hereby further amended by striking out said section and inserting in place thereof the following: — *Section 172.* The mayor of a city or the selectmen of a town may, except as provided in section forty-six of chapter one hundred and six of the Revised Laws, grant, upon such terms and conditions as they deem reasonable, a license for theatrical exhibitions, public shows, public amusements and exhibitions of every description to which admission is obtained upon payment of money or upon the delivery of any valuable thing, or by a ticket or voucher obtained for money or any valuable thing, or in which after free admission, amusement is furnished upon a deposit of money in a mechanical device known as the "nickel in the slot" machine or "penny in the slot" machine, or in any other similar machine, and the mayor or selectmen may revoke or suspend such license at their pleasure, but they shall not grant a license for any such theatrical exhibitions, public shows or public amusements or exhibitions of any description whatever to be held upon the Lord's day, except that they may grant licenses for public entertainments to be held on the Lord's day which shall be in keeping with the character of the day and not inconsistent with its due observance, to which admission is obtained upon payment of money or some other pecuniary or valuable consideration, such license to be issued subject to such terms or conditions as the mayor or selectmen may prescribe: *provided, however,* that no such license to be exercised on the Lord's day shall be granted to have effect before one o'clock in the afternoon, nor unless the proposed entertainment shall be approved in writing by the chief of the district police as being in keeping with the character of the day and as not inconsistent with its due observance, and any such license may, after notice and a hearing given by the mayor or selectmen issuing the same, or by the chief of the district police, be suspended, revoked or annulled by them or him,

and no such exhibition, show or amusement, except a concert of sacred music or a free open air concert given by a city or town upon a common, public park, street or square, shall be given without such license.

SECTION 3. All acts and parts of acts inconsistent herewith are hereby repealed.

For the effectual enforcement of the provisions of this statute, so far as they relate to my duties in connection therewith, I found it necessary to issue certain regulations, copies of which have been furnished, from time to time, to the managers of the various theatres and halls in which such entertainments are held upon the Lord's day, and during the past year the second revision of such regulations has been made in order to meet new conditions that have arisen. The existing regulations are as follows:—

Revised Regulations governing the Approval of Entertainments to be held on the Lord's Day.

Acts of 1908, chapter 385, provides that the mayor of a city or the selectmen of a town may grant licenses for public entertainments to be held on the Lord's day to which admission is to be obtained upon payment of money or some other pecuniary or valuable consideration; but before any such entertainment may be held it must be approved in writing by the Chief of the District Police as being in keeping with the character of the day and not inconsistent with its due observance. Acts of 1909, chapter 189, provides that every application to the Chief of the District Police for his approval of an entertainment proposed to be held on the Lord's day shall be accompanied by a fee of \$1.

IN ORDER TO PROPERLY CARRY OUT THE PROVISIONS OF THE ABOVE-MENTIONED STATUTES, THE FOLLOWING REVISED REGULATIONS GOVERNING THE APPROVAL OF ENTERTAINMENTS TO BE HELD ON THE LORD'S DAY, AND TAKING EFFECT ON THE FIRST DAY OF AUGUST, 1914, ARE PUBLISHED FOR THE INFORMATION OF ALL CONCERNED.

1. An entertainment to be held upon the Lord's day will not be approved *unless the license for such entertainment is granted to the licensee of the theatre or hall in which such entertainment is to be held, and each application and program must be signed by such licensee.*

2. The licensee of the theatre or hall in which an entertainment is held on the Lord's day shall be personally responsible for compliance with these Regulations.

3. The application, program and license forms shall be of standard form and size (8½" x 11"), and may be obtained from the State printers, Wright & Potter Printing Company, 32 Derne Street, Boston, at the following rates: —

1 set, 3 blank forms,	.	.	.	.	.	.	.	\$0 25
5 sets, 15 blank forms,	.	.	.	.	.	.	.	75
10 sets, 30 blank forms,	.	.	.	.	.	.	.	1 20
25 sets, 75 blank forms,	.	.	.	.	.	.	.	2 25
50 sets, 150 blank forms,	.	.	.	.	.	.	.	3 00
100 sets, 300 blank forms,	.	.	.	.	.	.	.	4 50
Each additional 100 sets (extra),	.	.	.	.	.	.	.	3 00

(Each set includes 1 application, 1 program, 1 license. Two sets are required for each entertainment.)

4. The license, program and application forwarded to the Chief of the District Police for his approval of the entertainment shall each be in duplicate, and the license must be signed by the mayor of the city or a majority of the selectmen of the town. Such papers must reach the office of the Chief of the District Police *before 12 o'clock noon on the Friday preceding the Sunday upon which the entertainment is to be held.*

5. The program must show in detail the nature of the entertainment, the correct titles of moving pictures, the names of makers of the moving pictures, the correct titles of all songs, the names of artists and a description of the dress worn; also when a dramatic or operatic production, or a sketch, forms a part of the entertainment, a synopsis, in duplicate, of each and every such drama, opera or sketch must be furnished.

6. Only such titles of moving pictures shall appear upon the programs as are included in the printed Lists of Approved Moving Picture Films, dated June 10, 1911, and June 1, 1914, and the Weekly Lists issued subsequent to June 1, 1914. The titles of the moving pictures and the names of the makers, shown upon the program, must conform to the titles and names as given in such lists. (Copies of these lists can be obtained upon application to this office.)

7. The entertainment shall be limited to the numbers shown upon the approved program, and no change in an approved entertainment shall be made without the permission of the mayor of the city or the selectmen of the town granting the license, and also the approval of the Chief of the District Police; such permission and approval must be obtained *prior* to the time the entertainment is held.

8. An entertainment will not be approved for a longer period than one Lord's day.

9. All entertainments shall be in keeping with the character of the Lord's day and not inconsistent with its due observance.

10. No entertainment shall commence before 1 o'clock P.M. nor terminate later than 11 o'clock P.M.

11. No person or persons shall be permitted to attract the attention of the public by announcements, and no musical device or instrument shall be played at the entrance of any place of entertainment.

12. No articles nor refreshments of any kind shall be offered for sale, and no smoking will be permitted.

13. Change of scenery shall not be made during the entire entertainment.

14. Artists appearing upon the stage must be properly clothed. No female shall appear in male attire, nor in tights, nor in skirts which do not reach the ankles. No male shall appear in female attire.

15. No indecent language nor suggestive action shall be allowed. *Parodies of any nature on songs are strictly prohibited.* Any artist violating this regulation will thereafter be prohibited from appearing in any entertainment held on the Lord's day in this Commonwealth.

16. No entertainment shall be given in which there is an element of chance.

17. Dancing in any form, juggling, contortion, magic or illusion acts will not be permitted.

18. Firearms shall not be used.

19. There shall be no ring-pulling nor candy-grabbing in connection with merry-go-rounds or other entertainments.

20. No mechanical apparatus for discharging compressed air will be permitted.

21. No advertising card shall be used in connection with a mutoscope, penny-in-the-slot machine, or similar device, and no picture shall be displayed in any such machine or device unless such card or picture has been stamped "APPROVED" by the Chief of the District Police.

22. Each mutoscope or other machine or apparatus of such nature that the person using the same breathes or speaks into it, or, for the purpose of seeing or hearing, holds any part thereof in contact with or near to his eyes or ears, shall be disinfected, in such manner as shall be approved by the local board of health, at least twice during such hours, in every twenty-four hours, that such mutoscope or other machine or apparatus is offered for the use of the public. (See Acts of 1908, chapter 381, section 1.)

23. No lung-testing machine nor similar contrivance, the use of which requires the application of any part thereof to the lips, shall be used. (See Acts of 1908, chapter 381, section 2.)

24. No minor shall be admitted, without the written consent of

his parent or guardian, to any place in which pictures are displayed upon deposit of money in a nickel-in-the-slot machine or penny-in-the-slot machine, or in any similar device. (See Acts of 1908, chapter 368.)

25. No child under the age of fourteen years shall be admitted to any entertainment after 6 o'clock in the afternoon, unless accompanied by a person above the age of twenty-one years. (See Acts of 1910, chapter 532.)

26. The respective provisions of all statutes relating to theatres, public halls, or other places of assemblage must be complied with.

27. The violation of any of these regulations will be considered sufficient cause for the disapproval of subsequent license or licenses.

These regulations supersede the regulations issued July 1, 1911.

J. H. WHITNEY,
Chief of District Police.

The duty of determining whether or not an entertainment submitted for my approval should be approved is not at all times an easy task. It is, of course, understood that when a license for an entertainment has been granted by the mayor of a city or the selectmen of a town it is evidently the opinion of such licensing authority that the entertainment for which the license has been granted is of such nature as to be consistent with the due observance of the Lord's day, and therefore should be approved by me. I have endeavored, however, to carry out the intent of the law in a just and impartial manner, and that my efforts have been generally satisfactory is apparent from the fact that but few complaints have been received by me in relation to such entertainments, and those received have been made by such persons as apparently desire the prohibition of all entertainments upon the Lord's day, or by those desiring that entertainments of all kinds should be given upon that day, as upon other days of the week.

It will be noted, by reference to the statement which follows, that I have found it necessary to disapprove of but 26 entertainments out of a total number of 8,551 referred to me for approval, the majority of such disapprovals having been caused by the repeated violation of some regulation by the respective licensees, and not from any difference of

opinion between the licensing authorities and myself. Although there have been but 26 entertainments disapproved, there have been a number of entertainments, probably about 5 per cent., of which certain parts have been disapproved for just and sufficient reasons. In all such cases the licenses have been indorsed with a statement as to which numbers of the program have been disapproved, and a letter of explanation has been forwarded to the licensing authorities calling attention to the disapproved numbers, and also the licensees have been cautioned to exercise greater care in their selection of entertainments in future, in order to prevent the possibility of the disapproval of an entire entertainment.

In addition to the approval in writing of the entertainments, it becomes my duty, in order to more fully and efficiently carry out the provisions of the statutes governing them, to visit on each Lord's day many of the entertainments given in the city of Boston and surrounding municipalities, to ascertain if the law and regulations are being complied with and that the entertainments are strictly limited to the numbers on the programs approved by me. It has also been necessary to detail other officers of the various departments to perform like duty in the cities and towns of their respective districts, as occasion might seem to require, such officers being instructed to report to me, upon the following day, any violation of the law or regulations. Whenever such reports have been received by me, either from the officers detailed for this duty or from other citizens, an investigation has been made and the necessary action taken to prevent a repetition of the offence.

Extensive clerical work has been necessary in connection with the approval of these entertainments, such as a careful comparison of our records in order to prevent the approval of entertainments which it may be desired to hold in theatres or halls not duly licensed by this Force for such entertainments; the preparation of the lists of approved moving pictures hereafter referred to and the forwarding of the same to the respective managers; the checking and comparing of the programs for the purpose of ascertaining that the entertainment in every particular complies with the regulations;

correspondence with the mayors of cities, selectmen of towns and the licensees; the indexing and filing of the retained copies of licenses and other documents; the recording of all licenses received and of the fees which accompany the application; the checking of the original licenses and programs with the copies of the same; the forwarding of the licenses and other documents connected therewith to the respective mayors of cities and selectmen of towns after action has been taken thereupon; the correspondence in connection with the investigation of the reports relating to violations of the law or regulations; the reporting of hearings; and many other similar details.

As a very large percentage of the entertainments held on the Lord's day consist for the most part of moving pictures, in order to prevent the possibility of the display of objectionable features, I arranged, during the early part of 1909, that the agents of the moving-picture film companies who desired to rent films to the managers of entertainments held on the Lord's day should display such films before me, or my representative, in a room located in the sub-basement of the State House, on Wednesday and Friday of each week, and the result of this method has been very satisfactory to all concerned. The principal moving-picture agencies located in Boston, and also individual owners of films, have displayed during the past year a total of 1,524 films, of which number 1,122, or, nearly 74 per cent., were approved for such entertainments. A very large number of films which have been released by the respective film companies are not brought to the State House to be censored for the reason that the agents have been cautioned that moving pictures representing crime of any kind, dancing, gambling, rough play, cruelty to human beings or animals, the use of firearms, suggestive scenes, etc., would not be approved.

On Monday of each week a list of the titles and names of the manufacturers of the moving-picture films, which have been approved by me during the preceding week, is forwarded to the manager of each theatre and hall where moving pictures form part of the entertainments held, in order that such managers may be informed of the titles and manu-

facturers' names of the moving pictures which have been approved, and may thus be able to comply with the regulations in so far as they apply to the exhibition of motion pictures.

I have received, during the year, from the respective licensing authorities of the cities and towns detailed in the following statement, the number of licenses for entertainments shown therein, the same having been submitted for my approval of the entertainments represented by the licenses and the programs accompanying the same. The statement also shows the number of entertainments disapproved:—

STATEMENT OF NUMBER OF ENTERTAINMENTS HELD ON THE LORD'S DAY.

CITY OR TOWN.	ENTERTAINMENTS.		
	Approved.	Not approved.	Total.
Adams,	17	—	17
Agawam,	171	—	171
Amesbury,	1	—	1
Athol,	2	—	2
Attleborough,	15	—	15
Avon,	61	—	61
Billerica,	11	—	11
BOSTON,	2,072	—	2,072
BROCKTON,	3	—	3
CAMBRIDGE,	46	—	46
CHELSEA,	99	—	99
CHICOPEE,	207	—	207
Clinton,	1	—	1
Danvers,	2	—	2
Dartmouth,	64	—	64
Dedham,	28	—	28
Dighton,	18	—	18
Dracut,	86	—	86
Easthampton,	1	—	1
Enfield,	1	—	1
FALL RIVER,	606	7	613
FITCHBURG,	1	—	1
Gardner,	1	—	1

STATEMENT OF NUMBER OF ENTERTAINMENTS HELD ON THE LORD'S
DAY — *Continued.*

CITY OR TOWN.	ENTERTAINMENTS.		
	Approved.	Not approved.	Total.
GLOUCESTER,	67	—	67
Greenfield,	6	—	6
Groveland,	47	—	47
HAVERHILL,	254	2	256
HOLYOKE,	534	1	535
Hudson,	12	—	12
Hull,	221	—	221
Ipswich,	1	—	1
LAWRENCE,	390	4	394
Leominster,	6	—	6
Lexington,	60	—	60
LOWELL,	518	2	520
Ludlow,	45	—	45
Lunenburg,	1	—	1
LYNN,	325	—	325
MARLBOROUGH,	44	—	44
Maynard,	1	—	1
MEDFORD,	2	—	2
Mendon,	32	—	32
Methuen,	12	—	12
Milford,	2	—	2
Mitteneague,	1	—	1
Montague,	131	—	131
Nahant,	69	—	69
NEW BEDFORD,	22	—	22
NEWBURYPORT,	1	—	1
NEWTON,	156	—	156
NORTH ADAMS,	8	—	8
North Attleborough,	1	—	1
Norwood,	4	—	4
Palmer,	23	—	23
Peabody,	28	—	28
Pembroke,	20	—	20
PITTSFIELD,	40	—	40
Plymouth,	4	—	4

STATEMENT OF NUMBER OF ENTERTAINMENTS HELD ON THE LORD'S
DAY—*Concluded.*

CITY OR TOWN.	ENTERTAINMENTS.		
	Approved.	Not approved.	Total.
QUINCY,	38	1	39
Revere,	621	3	624
Rockland,	2	—	2
SALEM,	146	—	146
Salisbury,	88	1	89
Shrewsbury,	174	—	174
SOMERVILLE,	1	—	1
Spencer,	2	—	2
SPRINGFIELD,	329	5	334
Stoughton,	1	—	1
TAUNTON,	29	—	29
WALTHAM,	20	—	20
Ware,	4	—	4
Wareham,	66	—	66
Webster,	100	—	100
Westfield,	105	—	105
Westwood,	13	—	13
Weymouth,	1	—	1
Whitinsville,	1	—	1
Winchendon,	3	—	3
Winthrop,	2	—	2
WORCESTER,	148	—	148
Wrentham,	29	—	29
Totals,	8,525	26	8,551

From the foregoing statement it is to be noted that 8,551 licenses were forwarded for my approval of the entertainments represented by them, and that of such number 8,525 were approved and 26 were not approved. The average weekly number of licenses submitted during the year was 164; the highest number submitted in any one week was 219; and the lowest number, 125.

In accordance with the provisions of chapter 189, Acts of 1909, a fee of \$1 has accompanied each application for-

warded to me for my approval, and I have accordingly received the sum of \$8,551 with such applications, which amount has been duly paid to the Treasurer of the Commonwealth.

The following is a comparative statement of the number of licenses for Lord's day entertainments which have been forwarded to me for my approval of the entertainments represented by the same during the past five years. From such statement it will be noted that there has been a steady increase in the number from year to year:—

YEAR.	Licenses forwarded.	ENTERTAINMENTS.	
		Approved.	Disapproved.
1910,	6,080	6,067	13
1911,	6,763	6,734	29
1912,	7,377	7,363	14
1913,	8,316	8,276	40
1914,	8,551	8,525	26

It is very gratifying to me to be enabled to report that during the seven years in which the duty of approving entertainments held on the Lord's day has been placed upon me, I have received the most helpful co-operation of the licensing authorities of the various cities and towns, in connection with the enforcement of the law and regulations governing such entertainments.

RELATIVE TO THE EXHIBITION OF MOVING PICTURES.

Some nineteen years ago, when moving pictures were first exhibited in many of the cities of the United States, it was not anticipated that the exhibition of such pictures would, in so short a time, become a financial proposition of such large importance; but such has proven to be the case in this Commonwealth, as in other States of the Union, and the majority of the theatres and halls in which public entertainments are given have made the necessary changes in order that moving pictures might be safely displayed therein. In this Commonwealth there are at least 400 theatres and halls in which these exhibitions are given, many of them being open for such entertainments upon every day of the week.

As the motion-picture film is of a very combustible nature, it was at once realized that the introduction of such films into places of public assemblage considerably increased the fire hazard, and the necessity for such action by the Legislature as would restrict the uses of such films in order to lessen, as far as possible, the fire risk was at once apparent; and the Legislature of 1905 enacted certain statutes providing for the operation and use of the cinematograph or moving-picture machine, the same being contained in chapters 176 and 437 of the acts of that year. Under the provisions of these acts, the District Police Force was charged with their enforcement, apparently for the reason that the theatres and halls throughout the Commonwealth, with the exception of those located in the city of Boston, were under the jurisdiction of this Force.

In consequence of the rapid growth of the moving-picture business, additional legislation was found to be necessary, and the Legislature of 1908 enacted certain laws relative to the exhibition of moving pictures, the same being contained in chapters 565 and 566 of the acts of that year; also in 1909 chapter 281 was enacted, providing that certain fees should be paid for the inspection of the cinematograph and booth, for the examination of applicants for licenses as op-

erators of such machines, and for the application for a permit as an assistant to an operator.

During the past year the various statutes relative to the operation of the cinematograph and the exhibition of motion pictures have been revised and codified by the passage of chapter 791, Acts of 1914, which took effect Aug. 7, 1914, thirty days after its passage, and provides as follows:—

ACTS OF 1914, CHAPTER 791.

AN ACT RELATIVE TO THE OPERATION OF THE CINEMATOGRAPH AND TO
THE EXHIBITION OF MOTION PICTURES.

SECTION 1. No cinematograph, or similar apparatus, involving the use of a combustible film more than ten inches in length, shall be kept or used for the purpose of exhibiting such films in or upon the premises of a public building, public or private institution, schoolhouse, church, theatre, special hall, public hall, miscellaneous hall, place of assemblage, or place of public resort, until such cinematograph or similar apparatus has been inspected and approved by an inspector of the building inspection department of the district police, who shall have placed thereon a numbered metal tag; nor until a booth, or enclosure, which has been inspected and approved by such an inspector and his certificate issued therefor, has been provided for said apparatus; nor until such precautions against fire as the chief of the district police may specify have been taken by the owner, user or exhibitor therefor: *provided, however*, that no such cinematograph or similar apparatus shall be operated with oxyhydrogen gas, so-called, or with limelight. In addition, in the city of Boston, the location of any booth or enclosure surrounding said apparatus, shall be approved by the building commissioner, who may order such additional precautions against fire as he may deem necessary.

SECTION 2. The inspectors of the building inspection department of the district police are hereby empowered and directed to inspect any cinematograph or similar apparatus involving the use of a combustible film more than ten inches in length, which is to be kept or used in or upon any of the premises defined in section one of this act; and also to inspect any booth or enclosure provided for the same; and the chief of the district police shall make such rules and regulations as he may deem necessary for the safe use thereof.

SECTION 3. For the inspection of a cinematograph or similar apparatus, or for the inspection of a booth or enclosure, as provided by section one of this act, a fee of two dollars shall be paid by the owner or user thereof.

SECTION 4. Except as provided for in section six of this act, no person shall exhibit or operate any cinematograph or similar apparatus involving the use of a combustible film more than ten inches in length, in or upon any of the premises defined in section one of this act, until he has received a special or first-class license so to do from an inspector of the building inspection department of the district police. No such license shall be granted until the applicant has passed an examination proving him to be thoroughly skilled in the working of the mechanical and electrical apparatus or devices used in, or connected with, the operation of a cinematograph or similar apparatus, as hereinbefore defined, and no person under twenty-one years of age shall be eligible for such examination. The fee for the examination shall be three dollars and shall accompany the application for license. The first-class license shall be for the term of one year from the date thereof, but may be renewed yearly without examination, by an inspector of the building inspection department of the district police, upon the payment of a fee of one dollar.

SECTION 5. Any person eighteen years of age or over, desiring to act as an assistant to a holder of a special or first-class license, shall register his name, age and address on a form furnished for the purpose by the chief of the district police; and, upon the payment of a fee of one dollar, the said chief may issue a permit allowing such person to assist such a licensed operator in a booth or enclosure; but such person shall not himself operate the cinematograph or similar apparatus. The permit shall be for the term of one year from the date thereof, but may be renewed yearly by the chief of the district police upon the payment of a fee of fifty cents.

SECTION 6. A second-class license giving the right to operate a hand-driven cinematograph or similar apparatus, but only in the presence of a holder of a special or first-class license, may be granted to any person who is not less than twenty years of age and who has been employed for three months as an assistant under the supervision of a licensee or licensees in or upon any of the premises defined in section one of this act. The applicant, as a condition of receiving the said second-class license, shall pass an examination satisfactory to an inspector of the building inspection department of the district police, and shall present to the chief of the district police an affidavit signed and sworn to by him, stating that he has so worked for said period. The chief of the district police may require that the affidavit be corroborated. The fee for the examination shall be two dollars and shall accompany the application for license. The license shall be for the term of one year from the date thereof, but may be renewed yearly by an inspector of the building inspection department of the district police upon the payment of a fee of fifty cents.

SECTION 7. Any person over twenty-one years of age who has held a second-class license for three months or more and has worked regularly during that period in a booth or enclosure in or upon any of the premises defined in section one of this act, may receive a license of the first class upon presenting to the chief of the district police an affidavit signed and sworn to by him stating that he has so worked for the said period and upon passing the examination and payment of the fee as provided for in section four of this act.

SECTION 8. Any person who has operated a cinematograph or similar apparatus under a license issued by the district police under any preceding act and any person over twenty-one years of age who presents to the chief of the district police an affidavit signed and sworn to by him stating that he has operated a cinematograph or similar apparatus in a booth or enclosure, in a theatre or hall devoted to public exhibitions of moving pictures outside the commonwealth for a period of three months or more shall be eligible for the examination for a special or a first-class license as provided in sections four and ten of this act.

SECTION 9. A first-class license shall apply only to the operation of a hand-driven cinematograph or similar apparatus.

SECTION 10. The holder of a first-class license as defined in this act, or any person designated in section eight of this act who passes an examination satisfactory to the district police, may be granted a special license to operate by hand or by motor any cinematograph or similar apparatus which has been inspected and tagged by the district police. The fee for the examination shall be three dollars and shall accompany the application for a license. The license shall be for the term of one year from the date thereof, but may be renewed yearly by an inspector of the building inspection department of the district police upon the payment of a fee of one dollar.

SECTION 11. An operator's license or an assistant's permit issued under this act may be suspended or revoked for cause at any time by an inspector of the building inspection department of the district police, but the person whose license or permit is so suspended or revoked may appeal to the chief of the district police, whose decision in the matter shall be final.

SECTION 12. Except in the city of Boston, the chief of the district police may grant permits for the special exhibition of pictures by the use of a cinematograph or similar apparatus in or upon any of the premises defined in section one of this act, which, in his opinion, are in safe condition for such exhibitions, and he may prescribe such regulations as he may deem necessary for the presentation of the same. A fee of two dollars shall accompany the application for each permit.

SECTION 13. The provisions of sections one to five, inclusive, of

this act shall not apply to any cinematograph or similar apparatus operated with only cellulose acetate films not more than one inch and one fourth in width and requiring not more than five hundred watts of electric current to operate the arc: *provided, however*, that such machines shall not be kept or used in or upon any of the premises defined in section one of this act except under such regulations as the chief of the district police shall prescribe.

SECTION 14. This act shall not apply to licenses or special licenses to operate cinematographs or similar apparatus issued by the district police and now in force, but upon the expiration of any such licenses the holder of a special license shall be entitled to a special license under this act upon the payment of the renewal fee as provided for in section ten, and the holder of a license shall be entitled to a first-class license under this act upon the payment of the renewal fee as provided in section four of this act.

SECTION 15. Any person, firm, corporation or association of persons, keeping or using a cinematograph or similar apparatus contrary to the provisions hereof, or in violation of any rule or regulation made by the chief of the district police, or, in the city of Boston, in violation of any regulation or requirement made by the building commissioner in accordance with the provisions hereof, shall be punished by a fine of not less than fifty nor more than five hundred dollars.

SECTION 16. Chapters five hundred and sixty-five and five hundred and sixty-six of the acts of the year nineteen hundred and eight; chapter two hundred and eighty-one of the acts of the year nineteen hundred and nine; chapters forty-eight and four hundred and forty of the acts of the year nineteen hundred and eleven; chapter one hundred and eighty-two of the acts of the year nineteen hundred and twelve and all acts and parts of acts inconsistent herewith are hereby repealed.

SECTION 17. Notwithstanding any of the provisions of this act, the chief of the district police may grant special licenses for operators of moving pictures in churches, schoolhouses, or public institutions in the cities and towns of the commonwealth, except Boston, which, in his opinion, are in safe condition for said exhibitions, and he may prescribe regulations for the proper conduct of the same. A fee of two dollars shall accompany each application for such special license.

By reference to sections 4 to 10 of this statute it will be noted that provision is made for the granting of an assistant's permit and three classes of licenses, namely, second, first and special. Also, by reference to section 17 of this statute,

it will be found that provision is made for the granting of special limited licenses, by the Chief of this Force, to operators in churches, schoolhouses or public institutions in the cities and towns of the Commonwealth, except Boston.

The assistant's permit authorizes the holder thereof to act as an assistant to the holder of a special or first-class license, but such assistant may not operate the moving-picture machine; the holder of a second-class license is authorized to operate any hand-driven moving-picture machine, but only in the presence of the holder of a special or first-class license; the holder of a first-class license is authorized to operate any hand-driven moving-picture machine; the holder of a special license is authorized to operate any hand-driven or motor-driven moving-picture machine; the holder of a special limited license may operate any hand-driven machine in the church, schoolhouse or public institution for which the license is issued.

Upon the passage of the first-mentioned statutes, in order that their provisions might be effectively enforced, a moving-picture machine and booth were installed in a room in the sub-basement of the State House, to be used in the examination of applicants for operators' licenses. Since the installation of such machine and booth, in 1908, 5,799 applicants have been examined, of which number 2,169 have succeeded in obtaining the licenses for which they were examined.

Prior to the year 1910, the operation of a moving-picture machine was exclusively by hand, but subsequent to that time the motor-driven machine has been introduced, and one of such machines has been installed in the examination room, in order that applicants for special licenses might also receive a practical examination.

By the provisions of section 13 of the statute last quoted, the Edison Home Kinetoscope and similar machines have been exempted from certain provisions of such statute, and it is not now required that the operators of such machines shall obtain limited licenses, nor that such machines shall be inspected and tagged, as was the case before the passage of such provisions.

The applicants for licenses of each class receive a practical

examination, and notwithstanding the large number of licenses which have been granted, it has not been found necessary to revoke the license of any operator on account of incompetency, neither has a single complaint been received of the incompetency of any licensed operator.

During the past year 597 applications for examination have been made, 50 of which were for special licenses; 510 for first-class licenses; 23 for second-class licenses; 3 for special limited licenses; and 11 for limited licenses; of this number, 45 obtained special licenses; 206, first-class licenses; 13, second-class licenses; 1, special limited license; and 11, limited licenses. During the same period, 528 assistants' permits have been issued.

The statutes provide that a fee of \$3 shall accompany the application for a special or first-class license; a fee of \$2, the application for a second-class license, or for a special limited license; and a fee of \$1 for an assistant's permit; also that a fee of \$1 accompany each application for the renewal of a license; and \$2 for the inspection of a moving-picture machine, or of a moving-picture machine booth.

By the provisions of section 12 of the statute, the Chief of this Force is authorized to grant permits for special exhibitions of moving pictures in public buildings, public or private institutions, schoolhouses, churches, theatres, special halls, public halls, miscellaneous halls, places of assemblage or places of public resort, and a fee of \$2 must accompany the application for each permit. The following respective amounts have been received during the year:—

With applications for special, first-class and limited licenses,	\$1,713
With applications for second-class and special limited licenses,	52
With applications for renewal of licenses,	683
With applications for assistants' permits,	528
For the inspection of moving-picture machines,	560
For the inspection of moving-picture machine booths,	416
With applications for permits for special exhibitions,	900

This gives a total of \$4,852, which amount has been paid to the Treasurer of the Commonwealth.

During the year the regulations relating to the exhibition of moving pictures have been revised, the following being now in force, having taken effect on Aug. 7, 1914:—

Regulations relating to the Exhibition of Moving Pictures.

BOOTHS OR ENCLOSURES.

SECTION 1. A booth or enclosure, as required by chapter 791, Acts of 1914, and as specified in these regulations, shall be provided and shall be so located as not to obstruct or render dangerous any aisle, passageway or egress. Proper access to the booth or enclosure shall be provided.

SECTION 2. The *Standard Booth* shall be at least 7' 0" in height, the size to vary according to the number of machines, as follows: No. 1 booth, for one picture machine, not less than 6' 0" in width \times 8' 0" in depth; No. 2 booth, for two picture machines, or one picture machine and one stereopticon, not less than 9' 0" in width \times 8' 0" in depth; No. 3 booth, for two picture machines and one stereopticon, not less than 12' 0" in width \times 8' 0" in depth.

SECTION 3. The frame shall be made of iron or steel, as follows:—

(a) Angles forming the framework of the panels shall be $1\frac{1}{4}" \times 1\frac{1}{4}" \times \frac{3}{16}"$.

(b) Tees may be substituted for angles, provided the tees are equal to the combined size of two angles.

(c) Angles for door frame shall be $1" \times 1" \times \frac{3}{16}"$.

(d) Gusset plates at joints shall be $\frac{3}{16}"$ thick, and shall be riveted or bolted to each angle or tee by at least two $\frac{1}{4}"$ rivets or bolts, at each end.

(e) Strap iron pieces for covering horizontal joints shall be $2" \times \frac{1}{8}"$ (offset the thickness of the angles or tees so as to give a full bearing across the asbestos sheets), and shall be riveted to the angles or tees by at least two $\frac{1}{4}"$ rivets, at each end, and bolted to each asbestos sheet approximately every 6".

(f) Angles for rewind bench brackets shall be not less than $1" \times 1" \times \frac{3}{16}"$.

SECTION 4. The sides and top of booth and door shall be covered with asbestos wood or asbestos building lumber of at least $\frac{1}{4}"$ in thickness, the sheets to be so cut and arranged that there will be no vertical joints in the panels, and that the horizontal joints shall come over the strap iron, as hereinbefore provided. The asbestos sheets shall be secured to the angle or tee framework and to the strap iron strips by $\frac{3}{16}"$ bolts, nuts and washers, spaced approximately 6" on centers. The exposed joints between the asbestos sheets in the ceiling of the booth shall be covered on the under side, as well as on the upper side, by strap irons, $2" \times \frac{1}{8}"$, bolted through.

SECTION 5. The floor of the booth shall consist of sheets of asbestos wood or asbestos building lumber of at least $\frac{3}{8}$ " in thickness, cut in between the walls of the booth, placed upon tight $\frac{7}{8}$ " underflooring or platform, and securely screwed in place. Joints in flooring sheets must be filled with asbestos plastic cement.

SECTION 6. There shall be two apertures for each moving-picture machine in the booth or enclosure, one for projection not more than 6" in height \times 12" in width, and one for the operator not more than 12" in height \times 6" in width. When a double lamp stereopticon or dissolver is used, the aperture for projection may be 5" square or 5" in diameter, and the aperture for the operator of the same dimension as for the moving-picture machine.

SECTION 7. All the apertures shall have gravity slides set in metal runs of No. 28 B. & S. gauge galvanized iron, the runs to be placed flush with the sides and bottoms of openings and so formed that they will lap over the slides 1" on back and front. The slides shall be bound with the same material so that metal will run freely within metal in all cases; and there shall also be a special approved releasing device, with fusible link inserted, within easy reach of the operator, by which the combustible cord holding the slides may be quickly released by hand.

SECTION 8. The door shall be 2' 0" in width \times 6' 0" in height; shall have a substantial spring or gravity weight sufficient to keep it closed; shall be hinged to the frame or construction, so that it will swing freely; shall have strap iron 2" \times $\frac{1}{8}$ " extending the entire height and across the top for a stop, and shall be provided with a lock.

SECTION 9. The rewind bench shall have two shelves made of slate or of $\frac{7}{8}$ " boards painted with at least three coats of asbestos paint and having a covering on top of asbestos wood or asbestos building lumber $\frac{1}{4}$ " in thickness. The bench shall be not more than 4' 0" in length \times 1' 0" in width, the upper shelf to be used for rewinding and repairing films and the lower shelf for the storage of films.

SECTION 10. The portable feature of the booth, with frame made of angles, is secured by making the sides and top in panel form. The panels are fastened together with $\frac{1}{4}$ " bolts spaced not more than 2' 0" on centers. After bolting the panels together, the joints shall be filled with asbestos plastic cement. The panels forming the sides of the booth are interchangeable, and thus the panel containing the door may be placed on either the right or the left side of the booth, but shall not be placed in front of the center of the booth, except by written permission of the inspector. On premises where it is undesirable to keep the booth permanently erected, the joints

where the wall panels come together shall be covered on the inside with $2'' \times \frac{1}{8}''$ strap iron pieces securely bolted, as provided in (e) of section 3, and the joints at the junction of the walls and ceiling shall be covered by $1\frac{1}{4}'' \times 1\frac{1}{4}'' \times \frac{3}{16}''$ angles, permanently secured to the roof panels, and bolted through the wali panels when booth is erected. The certificate of approval of a booth used as herein described shall be void, unless the owner or user thereof notifies the inspector having jurisdiction, at least three days in advance, of his intention to re-erect the same.

SECTION 11. Nothing in the foregoing shall be construed as prohibiting the erection of an enclosure of strictly fireproof material: *provided, however*, that no such enclosure shall be erected until plans and specifications of the same have been filed with and approved by the inspector of the district in which it is to be erected.

SECTION 12. For ventilation, a booth or enclosure shall be provided with an inlet in each of the four sides, $1'3''$ in width \times $3''$ in height; such inlet shall be covered on the inside by wire netting of not more than $\frac{1}{4}''$ mesh, and the lower side shall be not more than $2\frac{1}{2}''$ above the floor. The netting shall be firmly secured to the asbestos board by means of iron strips and bolts. If the inspector so directs, there shall be an inlet in the floor, or in the side or rear near the floor line. Said inlet shall be not less than 100 square inches in area for a No. 1, 200 square inches for a No. 2, and 280 square inches for a No. 3 booth or enclosure, shall be connected with the outside air by a galvanized-iron pipe having a pitch downward if possible to the outside of the building, and shall be provided with a regulating damper; the outside shall be provided with a hood, or its equivalent, so arranged as to keep out the storm, and the inside shall be provided with a register face over $\frac{1}{2}''$ wire mesh if in the floor, or with a $\frac{1}{2}''$ wire mesh if in the side or rear. The mesh and grating shall be securely fastened in place, those in the walls to be bolted on as specified for the smaller inlets. In case this provision is required, all apertures in the booth or enclosure shall be provided with plate glass attached in such manner as not to interfere with the gravity slides, and the small inlets at bottom of booth or enclosure may be omitted, or supplied with sliding covers of $\frac{1}{4}''$ asbestos board.

SECTION 13. Near the center of the top of the booth or enclosure there shall be a circular opening of sufficient diameter, the upper side of which shall be provided with an iron flange securely fastened to the tees supporting the roof or ceiling construction. Securely fastened to this flange shall be a vent pipe of No. 26 B. & S. gauge galvanized iron, or other noncombustible material, not less than $12''$ in diameter for a No. 1, $16''$ for a No. 2, and $18''$ for a No. 3 booth or enclosure, said pipe leading to the outside of the building or to

a special incombustible vent flue. In this vent pipe shall be placed an electric exhaust fan of approved size, so fitted as to permit of its examination or removal, and so connected that it can be controlled from within the booth or enclosure. The location of the fan, in all cases, shall be as the inspector may direct.

SECTION 14. For the exhibition of moving pictures in the open air, other than in a summer theatre, the following specified *Special Booth* may be installed in place of the Standard Booth. The inside dimensions shall be not less than those of a No. 1 Standard Booth. The walls, ceiling and roof may be constructed of wood studding, ceiling joists and rafters, not less than 2" \times 4" and spaced not more than 2' 0" on centers; the walls and roof to be covered on the outside so as to be weatherproof. The interior shall be covered with sheets of asbestos wood or asbestos building lumber not less than $\frac{1}{4}$ " in thickness, secured to the wall studding, ceiling joists and headers with 1" No. 10 round head screws with washers, spaced approximately 6" on centers, and all joints in the asbestos shall be filled with asbestos plastic cement. The floor, apertures and ventilation of booth shall be as specified for the Standard Booth. The booth shall be elevated at least 3' 6" above the ground and securely braced.

SECTION 15. The *Portable Asbestos Booth* shall be at least 6' 6" in height by 5' 0" square, and is designed for temporary use for one picture machine only. The frame shall be of standard pipe, angle ventilator trap and fittings, shall conform to the specifications herein set forth, and in each case shall be approved by the inspector. The four corner posts shall be of $\frac{3}{4}$ " standard pipe, the eight horizontal members of $\frac{1}{2}$ " standard pipe, and the eight corner fittings of malleable iron or bronze casting, with braced corners. The ventilator trap shall be made of 1" \times 1" \times $\frac{1}{8}$ " angles on all sides, shall extend the full width of the top and 2" beyond the front of the top pipe, shall be securely hinged 1' 10" from the front, and the corners shall be braced with $\frac{1}{8}$ " gusset plate bolted to each angle with $\frac{3}{16}$ " bolts.

SECTION 16. The sides shall be of plain commercially pure asbestos cloth weighing not less than two pounds to the square yard, which shall be in one piece, long enough to lap over not less than 2' 0" where it comes together around the booth, and shall be not less than 7' 6" in width so as to lap on the floor; it shall be held in place by substantial metal hooks over the top pipe and with snap catches or asbestos cord on the bottom pipe, such hooks, bottom catches or cord to be not more than 8" on centers. The top shall be covered with asbestos cloth of the same quality as the sides, which shall be of sufficient size to hang down on all sides at least 8"; it shall be provided with metal hooks or asbestos cord which

shall hook or lace onto the pipe, to hold it in place. The floor shall be covered with an asbestos mat of the same material not less than 1' 0" larger than the booth on all sides, and held in place when in use with heavy thumb tacks.

SECTION 17. The overlapping sides shall form the entrance and exit of the booth. All raw edges of asbestos cloth shall be bound or hemmed at least 1" deep.

SECTION 18. The angle ventilator described in section 15 shall be so arranged that it may be raised at least 1' 0" above the top pipe of the booth, and held by a toggle joint, or other approved device, whereby, in case of accident, it can be instantly dropped.

SECTION 19. The apertures, two in number, one for the machine not more than 6" in height \times 12" in width, and one for the operator not more than 12" in height \times 6" in width, shall be provided with shutters sewed to curtain at the top of opening, and the lower edges of the same shall be weighted with $\frac{3}{8}$ " gas pipe, which shall be long enough to go the whole horizontal length of the shutter, and provided with cord and fusible link, as specified for the Standard Booth, running through a screw eye, or a ring attached to the pipe frame over the openings. All shutters shall be of size to lap over curtain at least $1\frac{1}{2}$ " on all sides.

SECTION 20. The inspector's certificate of approval of a standard booth or enclosure, together with a copy of the regulations, shall be conspicuously posted therein at all times, and no change shall be made in the booth or enclosure, or in the apparatus without the approval of the inspector.

SECTION 21. Each portable booth shall be distinctly marked with the maker's name and the serial number in 2" block letters and figures, and the certificate of approval, together with a copy of the regulations, shall be in the care of the operator whenever the booth is being installed or used.

MACHINES AND WIRING.

SECTION 22. Where more than one machine is used they shall be placed as near as practicable to 3' 6" on centers, but the center of a machine shall be not less than 2' 0" from the wall of the booth. All machines shall be securely fastened to the floor, and no part shall come in contact with any inflammable or combustible material.

SECTION 23. The upper and lower magazines of a machine shall be constructed of sheet metal, shall be made tight without the use of solder, and shall each have two sets of metal rollers which shall fit as tightly as practicable to the film, as it passes out or in. The door to each shall be hinged and provided with a catch to hold it tightly closed.

SECTION 24. The arc lamp shall be covered with an iron box, so

arranged as to catch all sparks and hot pieces of carbon, and all other lights in the booth or enclosure shall be covered by wire guards.

SECTION 25. The film reels shall be operated by a crank firmly secured to the spindle or shaft on head of the machine, except on motor-driven machines.

SECTION 26. A shutter shall be placed in front of the arc, so as to be instantly closed when necessary.

SECTION 27. Electric motors may be used for operating only on such machines as are especially fitted and approved for such use, in accordance with the following requirements:—

(a) The motor shall be securely attached to machine support, be satisfactorily enclosed, and separately fused and placed below the bottom line of lamp house.

(b) Electric current to operate both arc light and motor shall be controlled by one switch; an additional switch to control current to motor shall be installed, and so constructed as to spring open when not held closed by the operator.

(c) Both switches and the starting box shall be securely mounted on incombustible supports attached to the machine on the operating side, enclosed satisfactorily to the inspector and placed at least 1' 0" back from a perpendicular line of film exposure.

(d) The machine shall be so constructed or protected that while in operation, displaying a picture, the film cannot escape from the head enclosure or elsewhere except as the same is taken up by the lower magazine, and the crank shall be removed when motor-driven.

SECTION 28. Any change in the mechanism, or the alteration of any moving-picture machine, after it has been approved, tagged and sealed by an inspector, shall be cause for removal of the inspector's tag; and the removal of the inspector's tag shall prohibit the use of the machine in the Commonwealth.

SECTION 29. If auditorium lights are controlled from within the booth or enclosure, an additional emergency control shall be provided near the main exit of the auditorium, and kept at all times in good condition. All wires in booth or enclosure, except jumpers from the switch to rheostat, rheostat to lamp, and switch to lamp, shall be run in conduit with terminal bushings, junction boxes, outlet boxes and fuse boxes, with covers; all wire for machine lights to be not smaller than No. 6 for each arc, and, if more than one arc, are to be rated for 40 amperes per arc, and size figured by the latest underwriter's code. All jumpers above mentioned shall be asbestos-covered, stranded wire of size above mentioned, and fitted with terminals. One incandescent light will be allowed for each machine and one for the rewinding bench. All wire conduits in the booth or enclosure shall have porcelain outlets and junction boxes, with covers screwed on. All angles, and where the conduit enters

the junction box, shall be fitted with bushings. None but cartridge type of fuse shall be used inside the booth or enclosure, and of not over 45 amperes, unless by special permission of the inspector.

SECTION 30. Where wires for conveying electricity pass into, through, or rest upon any structure around the machine, ample insulation must be provided by the use of conduits, porcelain tubes or other insulating substance.

SECTION 31. All rheostats, resistance coils or other devices substituted for that purpose shall be properly insulated and secured in place, so that there will be no danger by overturning or short-circuiting the same. Such devices may be located in an accessible place outside the booth or enclosure, provided they are protected from all combustible material for a distance of 2' 0" on all sides by $\frac{1}{4}$ " asbestos board, or that they are in a $\frac{1}{4}$ " asbestos board box.

SECTION 32. No rotary converter, motor generator, or mercury are rectifier will be allowed in any booth or enclosure, and no water rheostat shall be placed in any part of the building in which the machine is located.

OPERATOR.

SECTION 33. The wire attachments shall be inspected by the operator before every exhibition, and 125 volts shall be the maximum permitted for use in operating the machine.

SECTION 34. A switch for shutting off or controlling the electric current shall be provided, and so placed as to be ready for instant use by the operator.

SECTION 35. No pieces of films or loose combustible material shall be allowed to remain in the booth or enclosure, unless kept in a metal box made without solder; the booth or enclosure must be kept in a clean condition at all times.

SECTION 36. No smoking shall be permitted in the booth or enclosure, and no matches shall be allowed therein.

SECTION 37. No person shall be allowed within the booth or enclosure, except the owner, manager, operators or assistants employed therein, and the door of the booth or enclosure shall be kept closed during the time the public are admitted to the auditorium.

SECTION 38. Moving-picture operators and assistants shall have their licenses or permits with them when employed in the booth or enclosure.

SECTION 39. Within twenty-four hours after the occurrence of any fire or accident within a booth or enclosure, the operator and manager of the exhibition shall send a written notice of said fire or accident to the chief of the district police, State House, Boston; and also to the inspector of the district in which the fire or accident occurred.

GENERAL PROVISIONS.

SECTION 40. No moving-picture exhibition shall be allowed in or upon any of the premises defined in section 1, chapter 791, Acts of 1914, until a license from the chief of the district police, or a certificate from an inspector, has been obtained for such premises; except, in the city of Boston, the license, certificate or permit is issued by the city authorities.

SECTION 41. A separate metal case, made without solder, and with tightly fitting cover, shall be provided for each reel of film when the same is not in the magazine or in the process of rewinding; or a combination box approved by the chief of the district police shall be provided for this purpose. All films must be repaired and rewound within the booth or enclosure.

SECTION 42. A fire extinguisher of the carbonic acid pattern shall be provided and located inside the booth or enclosure, ready for instant use.

SECTION 43. Carbon receptacles made of metal shall be used in the booth or enclosure, under such conditions and in such a way as the inspector shall direct.

SECTION 44. A spot-light may be allowed in the booth or enclosure upon special permission of the inspector, but the aperture for the same shall not be more than 12" square, and shall be supplied with a shutter, the same as the other apertures, hung with a separate cord and fusible link, and so arranged as to shut separately. This shutter shall be kept closed except when in actual use. No film shall be exposed in the booth during the time the spot-light is in operation.

SECTION 45. All members of the building inspection department of the district police are directed to enforce these regulations, and any violation of the laws of this Commonwealth relating to the exhibition of moving pictures, or of these regulations, shall be sufficient cause for prosecution, or for the immediate suspension or revocation of the license of the operator in charge, of the second-class operator, or of the permit of the assistant.

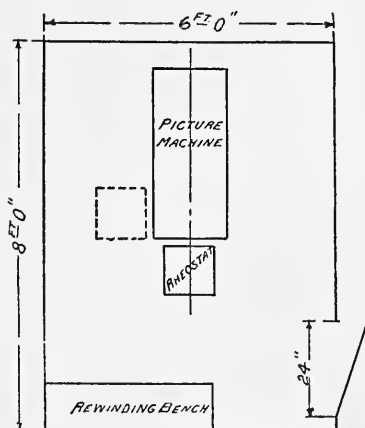
SECTION 46. Permits in accordance with the provisions of section 12, chapter 791, Acts of 1914, may be granted by the chief of the district police for the special exhibition of moving pictures where the portable booth hereinbefore described is to be used: *provided, however*, that only two such exhibitions may be given on any one date, one in the afternoon and one in the evening; that no one such exhibition shall exceed two and one-half hours in duration; and that no permit will be granted for any such building oftener than once in any seven days. The application for a permit shall be made to the chief of the district police upon blanks to be fur-

nished by him, and should be in his office at least one week before the date on which the exhibition is to be given. In the city of Boston, application should be made to the mayor, who may grant such permits in accordance with the provisions of chapter 280, Acts of the year 1913.

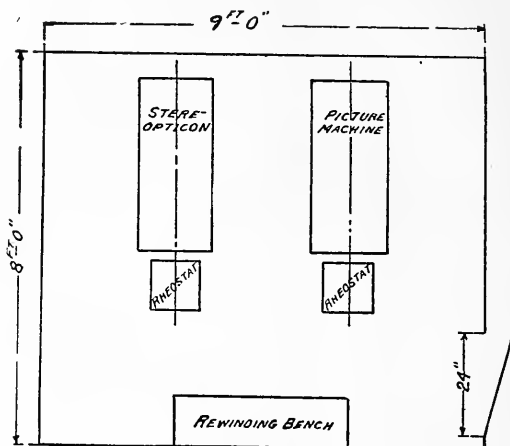
SECTION 47. When a cinematograph or similar apparatus, operated with only cellulose acetate films not more than $1\frac{1}{4}$ " in width and requiring not more than 500 watts of electric current for the arc, is exhibited in or upon any of the premises defined in section 1, chapter 791, Acts of 1914, a mat made of plain commercially pure asbestos cloth, weighing not less than two pounds to the square yard, or its approved equivalent, shall be provided and placed under the machine; the mat to be of sufficient size to completely envelop the machine in case of accident.

SECTION 48. These regulations supersede all regulations heretofore promulgated relating to the exhibition of moving pictures.

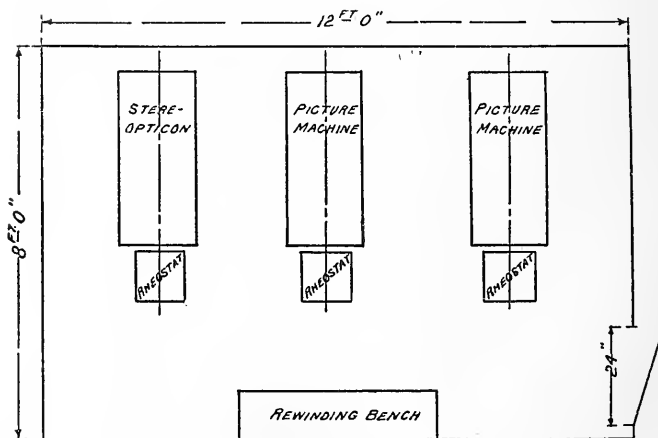
J. H. WHITNEY,
Chief of the District Police.



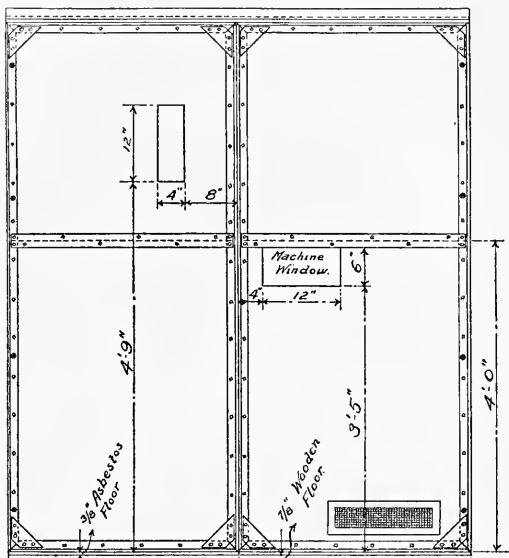
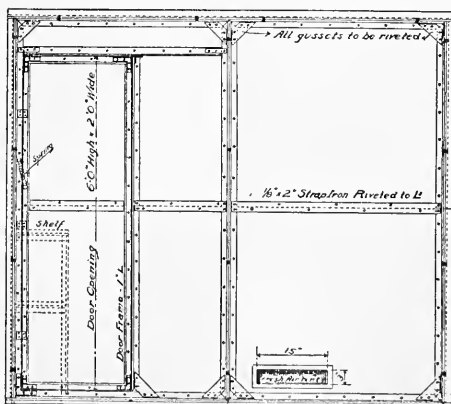
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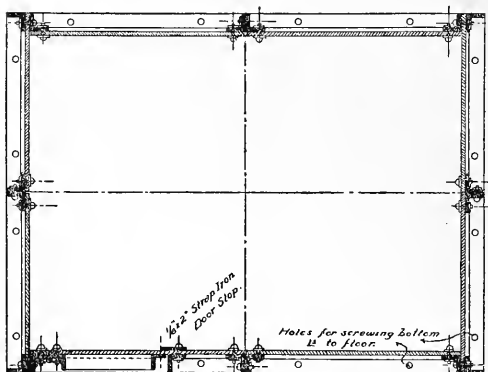


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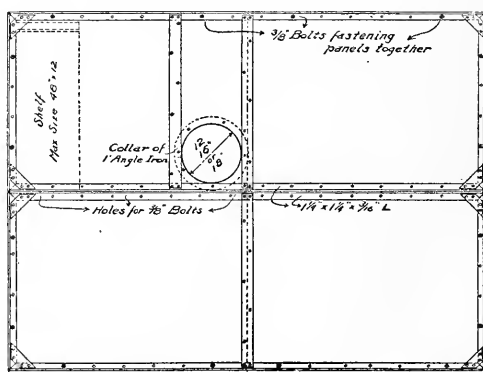


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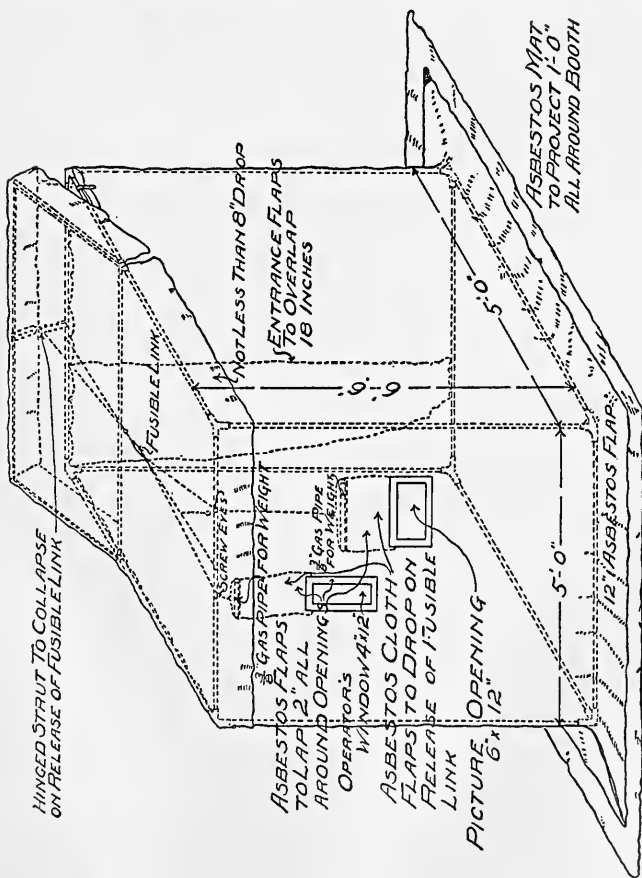
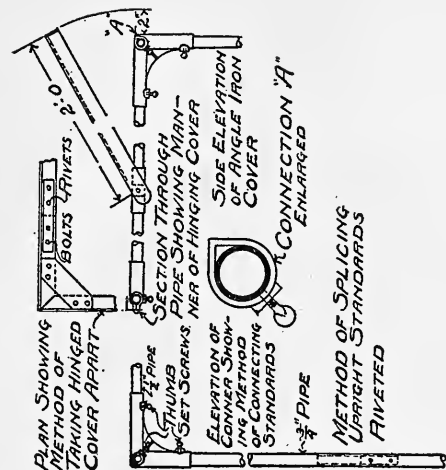
*Front Elevation.**Side Elevation.*



Sectional Plan.



Roof Plan.



ISOMETRICAL VIEW OF BOOTH.

Section 12 of the statutes relating to the exhibition of motion pictures authorizes the Chief of this Force to grant permits for special exhibitions, and it has been found necessary to issue the following regulations in connection therewith:—

Regulations governing the Granting of Permits for Special Exhibitions of Moving Pictures.

1. The application must be made to the Chief of the District Police upon forms to be furnished by him, *and must be in his office at least one week before the date on which the exhibition is to be given.*

2. The fee of \$2 must accompany the application.

3. A portable booth which has been approved by a building inspector of the District Police must be provided for the moving-picture machine, and must be located as directed by such an inspector.

4. A moving-picture machine which has been inspected, approved and tagged by a building inspector of the District Police must be used, and must be in charge of and operated by an operator holding a special or first-class license granted by such an inspector.

5. One or more chemical fire extinguishers of the carbonic acid type (in addition to the one in the booth) must be provided, ready for immediate use and in charge of a member of the regular fire department; a police officer must be on duty at the door.

6. All exits, aisles and passageways must be kept clear and unobstructed.

7. No inflammable curtains or decorations may be used.

8. A permit will not be granted for a special exhibition of moving pictures in a building oftener than once in every seven days.

9. The laws and regulations relating to the exhibitions of moving pictures must be complied with.

These regulations do not apply to the city of Boston.

J. H. WHITNEY,
Chief of the District Police.

REPORT OF CONDITION OF THEATRES, SPECIAL HALLS AND PUBLIC HALLS.

In accordance with the provisions of section 34, chapter 655, Acts of 1913, it becomes my duty to make a full report annually of the condition of all theatres, special halls and public halls, the statute further providing that such report shall be a public document, open to examination by the public at all times. As no provision is made as to the time or manner of making such report, I deem it advisable to include the same in this report, and the following statement, giving the names of the theatres, special halls and public halls which have been licensed by me during the twelve months ending Oct. 31, 1914, including the names of licensees, the location and general condition of the same, is accordingly made: —

THEATRES.

NAME.	Licensee.	Location.	General Condition.
Richmond Annex, . . .	B. M. Taylor, . . .	Adams, . . .	Good.
Crown Theatre, . . .	G. F. Crocker, . . .	Amesbury, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Amesbury, . . .	Good.
Colonial Theatre, . . .	Hilton and Warden, . . .	Andover, . . .	Good.
Athol Opera House, . . .	Albert Ellsworth, . . .	Athol, . . .	Good.
Lyric, . . .	N. J. & T. L. Lawler, . . .	Athol, . . .	Good.
Bates Theatre, . . .	Bates Block Associates, . . .	Attleborough, . . .	Good.
Columbia Theatre, . . .	Emma C. Allen, . . .	Attleborough, . . .	Good.
Idle Hour Theatre, . . .	Matthew Cushing, . . .	Barnstable, . . .	Good.
Dreamland Theatre, . . .	William L. Wood, . . .	Beverly, . . .	Good.
Larcom Theatre, . . .	N. Harris Ware Company, . . .	Beverly, . . .	Good.
Lyric Theatre, . . .	Allen W. Blake, . . .	Beverly, . . .	Good.
City Theatre, . . .	William B. Cross, . . .	Brockton, . . .	Good.
Empire, . . .	J. L. & J. W. Sullivan, . . .	Brockton, . . .	Good.
Hathaway's Theatre, . . .	McCue & Cahill, . . .	Brockton, . . .	Good.
Keith's Theatre, . . .	Robert A. Keene & Ivan A. Rogers, . . .	Brockton, . . .	Good.
New Orpheum Theatre, . . .	Felix Alland, . . .	Brockton, . . .	Good.
Olympia Theatre, . . .	Cambridge Olympia Company, . . .	Cambridge, . . .	Good.
Scenic Temple, . . .	Scenic Amusement Company, . . .	Cambridge, . . .	Good.
Empire Theatre, . . .	Irving Jones, Treasurer, . . .	Chelsea, . . .	Good.

THEATRES — *Continued.*

NAME.	Licensee.	Location.	General Con- dition.
Gordon's Theatre, . . .	Gordon Bros. Amusement Company.	Chelsea, . . .	Good.
Globe Theatre, . . .	Clinton Amusement Com- pany.	Clinton, . . .	Good.
Star Theatre, . . .	Clinton Amusement Com- pany.	Clinton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Clinton, . . .	Good.
Opera House, . . .	Henry F. Hewitt, . . .	Dalton, . . .	Good.
Lincoln Park Theatre, . .	Isaac W. Phelps, Manager, .	Dartmouth, . .	Good.
Lakeview Theatre, . . .	Ralph A. Ward, Manager, .	Dracut, . . .	Good.
Majestic Theatre, . . .	Almon W. Atkins, . . .	Easthampton, .	Good.
Broadway Theatre, . . .	M. C. Brown, . . .	Everett, . . .	Good.
Crown Theatre, . . .	F. F. Murphy & E. V. Hyde,	Everett, . . .	Good.
Academy of Music, . . .	Louis M. Boas, Manager, .	Fall River, . .	Good.
Bijou Theatre, . . .	Charles E. Cook, Manager, .	Fall River, . .	Good.
Plaza Theatre, . . .	Joseph A. Cloutier, . . .	Fall River, . .	Good.
Premier Theatre, . . .	Charles L. Benson, . . .	Fall River, . .	Good.
Savoy Theatre, . . .	Charles L. Benson, . . .	Fall River, . .	Good.
Auditorium Theatre, . .	Bijou Amusement Company,	Fitchburg, . .	Good.
Bijou Theatre, . . .	Bijou Amusement Company,	Fitchburg, . .	Good.
Lyric, . . .	Cornelius Quinlan, . . .	Fitchburg, . .	Good.
Shea Theatre, . . .	Patrick F. Shea, . . .	Fitchburg, . .	Good.
Universal Theatre, . . .	Harry Roberts & Samuel V. Grant.	Fitchburg, . .	Good.
Gorman Theatre, . . .	Trimount Theatre Company,	Framingham, .	Good.
Princess Theatre, . . .	Trimount Theatre Company,	Framingham, .	Good.
Gardner Theatre, . . .	Morton & Co., . . .	Gardner, . . .	Good.
Orpheum Theatre, . . .	Trimount Theatre Company,	Gardner, . . .	Good.
Olympia Theatre, . . .	Olympia Amusement Com- pany.	Gloucester, . .	Good.
Mahaiwe Theatre, . . .	W. C. Howitt, . . .	Great Barrington,	Good.
Bijou Theatre, . . .	Herbert S. Streeter, . . .	Greenfield, . .	Good.
Lawler, . . .	Lawler Bros. Theatre Com- pany.	Greenfield, . .	Good.
New Victoria, . . .	L. Rosenweig, . . .	Greenfield, . .	Good.
Academy of Music, . . .	Charles H. Emerson, . . .	Haverhill, . .	Good.
Colonial Theatre, . . .	Colonial Theatre, Inc., . .	Haverhill, . .	Good.
Majestic Theatre, . . .	Janmelli & Boschetti, . . .	Haverhill, . .	Good.
Orpheum Theatre, . . .	Orpheum Theatre Company,	Haverhill, . .	Good.
Scenic Temple, . . .	New England Amusement Company.	Haverhill, . .	Good.
Bijou Theatre, . . .	Frank Rainault, . . .	Holyoke, . . .	Good.
Empire Theatre, . . .	Thomas F. Murray, . . .	Holyoke, . . .	Good.
Globe Theatre, . . .	Chas. L. Higginbotham, . .	Holyoke, . . .	Good.

THEATRES — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Grand Theatre, . . .	Moses Demers, . . .	Holyoke, . . .	Good.
Majestic Theatre, . .	Harry Newman, . . .	Holyoke, . . .	Good.
Mountain Park Casino, .	L. D. Pellissier, . . .	Holyoke, . . .	Good.
Opera House, . . .	P. F. Shea, . . .	Holyoke, . . .	Good.
Suffolk Theatre, . . .	Chas. L. Higginbotham, .	Holyoke, . . .	Good.
Hudson Opera House, .	Edwin J. Lynch, . . .	Hudson, . . .	Good.
Opera House, . . .	John J. Hubbard, . . .	Ipswich, . . .	Good.
Broadway Theatre, . .	Toomey & Demara, . . .	Lawrence, . . .	Good.
Colonial Theatre, . . .	Toomey & Demara, . . .	Lawrence, . . .	Good.
Nickel, . . .	Toomey & Demara, . . .	Lawrence, . . .	Good.
Opera House, . . .	Walter R. Rothera, . . .	Lawrence, . . .	Good.
Victoria Theatre, . . .	D. F. Conlon, . . .	Lawrence, . . .	Good.
Music Hall Theatre, . .	C. O. Amazeen, . . .	Leominster, . . .	Good.
Academy of Music, . . .	Trimount Theatre Company,	Lowell, . . .	Good.
B. F. Keith's Theatre, .	B. F. Keith Theatre Company, F. J. Sherwood, Agent.	Lowell, . . .	Good.
Lowell Opera House, . .	Great Eastern Amusement Company, John L. Shea, President.	Lowell, . . .	Good.
Merrimack Sq. Theatre, .	Merrimack Sq. Theatre Company.	Lowell, . . .	Good.
Playhouse Theatre, . .	John W. Buey, . . .	Lowell, . . .	Good.
Whalom Park Theatre, .	W. W. Sargent, Superintendent, F. & L. Street Railway.	Lunenburg, . . .	Good.
Auditorium, . . .	Loneragan Players, Inc., .	Lynn, . . .	Good.
Central Square Theatre, .	Central Square Amusement Operating Company.	Lynn, . . .	Good.
Dreamland Theatre, . .	Mrs. Sarah J. Lawson, . .	Lynn, . . .	Good.
Lynn Theatre, . . .	Trimount Theatre Company,	Lynn, . . .	Good.
Lynn Women's Club House,	Julia H. J. Hyde, Treasurer,	Lynn, . . .	Good.
Olympia Theatre, . . .	Olympia Theatre Company, .	Lynn, . . .	Good.
Theatre Comique, . . .	Moe Mark, . . .	Lynn, . . .	Good.
Auditorium Scenic Theatre,	W. D. Bradstreet, . . .	Malden, . . .	Good.
Orpheum Theatre, . . .	Ramsdell Bros., . . .	Malden, . . .	Good.
Lyceum Theatre, . . .	Fred M. Libby, Jr., . . .	Marblehead, . . .	Good.
Princess Theatre, . . .	Green & Campbell, . . .	Marlborough, . . .	Good.
Orpheum Theatre, . . .	Ramsdell Bros., . . .	Medford, . . .	Good.
Melrose Theatre, . . .	Ramsdell Bros., . . .	Melrose, . . .	Good.
Nipmuck Park Theatre, .	W. L. Adams, Superintendent, M. & U. Street Railway.	Mendon, . . .	Good.
Glen Forest Park Theatre,	Ralph A. Ward, Manager, .	Methuen, . . .	Good.
Milford Opera House, . .	Milford Amusement Company.	Milford, . . .	Good.
Colle Opera House, . . .	D. P. Shea, . . .	Montague, . . .	Good.

THEATRES — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Relay Theatre, . . .	Charles W. Sheafe, . . .	Nahant, . . .	Good.
Dreamland Theatre, . . .	O. V. Hull,	Nantucket, . . .	Good.
Natick Theatre, . . .	Suburban Amusement Com- pany.	Natick, . . .	Good.
Allen's Theatre, . . .	George W. Allen, Jr., . . .	New Bedford, . .	Good.
Big Nickel,	Joseph Tablas,	New Bedford, . .	Good.
Casino Theatre, . . .	Thomas J. Charett, Manager,	New Bedford, . .	Good.
Comique Theatre, . . .	New Bedford Amusement Company.	New Bedford, . .	Good.
Idle Hour Theatre, . . .	Idle Hour Amusement Com- pany.	New Bedford, . .	Good.
New Bedford Theatre, . .	William B. Cross,	New Bedford, . .	Good.
Orpheum Theatre, . . .	Orpheum Amusement Com- pany.	New Bedford, . .	Good.
Royal Theatre,	H. E. Tremblay,	New Bedford, . .	Good.
Savoy Theatre,	Edward D. Davenport, . .	New Bedford, . .	Good.
Vien's Theatre,	H. R. LeFebvre, Manager, .	New Bedford, . .	Good.
Premier Theatre, . . .	Eastern Theatres Company, .	Newburyport, . .	Good.
Star Theatre,	E. S. Hidden,	Newburyport, . .	Good.
Newton Opera House, . .	Fisher & Reed,	Newton,	Good.
Player's Hall Theatre, . .	Hatfield & Burrage, . . .	Newton,	Good.
Bijou Opera House, . . .	Frank S. Kells,	North Adams, . .	Good.
Empire Theatre,	B. M. Taylor,	North Adams, . .	Good.
Richmond Theatre, . . .	B. M. Taylor,	North Adams, . .	Good.
Academy of Music, . . .	Bertram Harrison,	Northampton, . .	Good.
Plaza Theatre,	Goldstein Bros. Amusement Company.	Northampton, . .	Good.
Starkey's Theatre, . . .	Edgar R. Starkey,	North Attlebor- ough.	Good.
Prospect Theatre, . . .	Walker Bros.,	Northbridge, . .	Good.
Castle Theatre,	John D. Baird,	Oak Bluffs, . . .	Good.
Noepe Theatre,	Cooper A. Gilkes,	Oak Bluffs, . . .	Good.
Brookside Park Theatre, .	Jerry Cook,	Orange,	Good.
Orange Town Hall, . . .	Inhabitants,	Orange,	Good.
Opera House,	W. F. Fillmore,	Palmer,	Good.
Peabody Theatre,	Aechtler & McKenney, . .	Peabody,	Good.
Colonial Theatre,	H. R. Tremblay,	Pittsfield,	Good.
Lyric Theatre,	John S. Whistler,	Pittsfield,	Good.
Majestic Theatre,	James B. Sullivan,	Pittsfield,	Good.
Pittsfield Grand Theatre, .	Louis Kaliski & W. A. Bene- dict.	Pittsfield,	Good.
Union Square Theatre, . .	John F. Cooney,	Pittsfield,	Good.
Old Colony Theatre, . . .	Wilfred Gillespie,	Plymouth,	Good.

THEATRES — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Plymouth Theatre, . . .	Charles Moning & Samuel Medved.	Plymouth, . . .	Good.
Pilgrim Theatre, . . .	Frank K. Atkins, . . .	Provincetown, . . .	Good.
Auditorium Theatre, . . .	Hiram A. Appleton, . . .	Quincy, . . .	Good.
Kincaide Theatre, . . .	George A. Wardwell, . . .	Quincy, . . .	Good.
Quincy Music Hall, . . .	Delsevare King, . . .	Quincy, . . .	Good.
Crescent Garden Theatre, . . .	Revere Beach Amusement Company.	Revere, . . .	Good.
Dream,	Aechtler & McKenney, . . .	Revere, . . .	Good.
Revere Theatre,	Sandler & Freedman, . . .	Revere, . . .	Good.
Scenic Temple,	J. Freedman,	Revere, . . .	Good.
Theatre Comique,	J. Freedman,	Revere, . . .	Good.
Rockland Opera House, . . .	John J. Bowler,	Rockland, . . .	Good.
Empire Theatre,	Arthur Koerner,	Salem,	Good.
Federal Theatre,	Koen Bros.,	Salem,	Good.
Salem Theatre,	Salem Theatre Company, . . .	Salem,	Good.
Day Street Olympia,	Somerville Amusement Company.	Somerville, . . .	Good.
Somerville Theatre,	Joseph O. Hobbs,	Somerville, . . .	Good.
Blanchard's Theatre,	Blanchard Bros.,	Southbridge, . . .	Good.
Vaudeville Theatre,	Blanchard Bros.,	Southbridge, . . .	Good.
Park,	Park Theatre Company, . . .	Spencer,	Good.
Bijou,	Edward L. Knight,	Springfield, . . .	Good.
Broadway,	Broadway Theatre Company, . .	Springfield, . . .	Good.
Court Square Theatre,	Dwight O. Gilmore,	Springfield, . . .	Good.
Gilmore Theatre,	P. F. Shea,	Springfield, . . .	Good.
Globe Theatre,	J. B. Thomas,	Springfield, . . .	Good.
Hudson Theatre,	John A. Hudson,	Springfield, . . .	Good.
Nelson Theatre,	Wm. Fox Amusement Company.	Springfield, . . .	Good.
Plaza,	Goldstein Bros. Amusement Company.	Springfield, . . .	Good.
Poli's Palace Theatre,	S. Z. Poli,	Springfield, . . .	Good.
Boylan,	LePlante & Lamoureux, . . .	Taunton,	Good.
Columbia Theatre,	Napoleon Chartier,	Taunton,	Good.
Park Theatre,	Edwin D. Dennison,	Taunton,	Good.
Sabbatia Park,	James J. Donovan,	Taunton,	Good.
Princess Theatre,	Charles W. Hodgdon,	Wakefield,	Good.
Scenic Theatre,	C. Edwin Jennings, Jr., . . .	Waltham,	Good.
Waltham Theatre,	Kingsbury & Bendslez, . . .	Waltham,	Good.
Bijou,	Joseph A. Jasmin,	Ware,	Good.
Casino,	F. F. Gilmore,	Ware,	Good.

THEATRES — *Concluded.*

NAME.	Licensee.	Location.	General Condition.
Town Hall, . . .	Inhabitants, . . .	Ware, . . .	Good.
Music Hall, . . .	O. W. Mercier, . . .	Webster, . . .	Good.
Nickel Theatre, . . .	St. Jean Baptiste Society, . . .	Webster, . . .	Good.
Opera House, . . .	Goldstein Bros. Amusement Company, . . .	Westfield, . . .	Good.
Westwood Park Theatre, . . .	William H. Walsh, . . .	Westwood, . . .	Good.
Majestic, . . .	William D. Linton, . . .	Winchendon, . . .	Good.
Dream, . . .	Charles L. Hatch, . . .	Winthrop, . . .	Good.
Empire Theatre, . . .	Charles Berman, . . .	Winthrop, . . .	Good.
Lyceum Hall Theatre, . . .	Joseph Deland, . . .	Woburn, . . .	Good.
Grand Theatre, . . .	S. Z. Poli, . . .	Worcester, . . .	Good.
Lincoln Park Theatre, . . .	Quinsigamond Park Company, . . .	Worcester, . . .	Good.
New Park Theatre, . . .	Gordon Bros. Amusement Company, . . .	Worcester, . . .	Good.
Plaza Theatre, . . .	S. Z. Poli, . . .	Worcester, . . .	Good.
Pleasant Theatre, . . .	E. W. Lynch, . . .	Worcester, . . .	Good.
Poli's Theatre, . . .	S. Z. Poli, . . .	Worcester, . . .	Good.
Worcester Theatre, . . .	P. F. Shea, Inc., . . .	Worcester, . . .	Good.

SPECIAL HALLS.

Turn Verein Hall, . . .	John Karnitshika, . . .	Adams, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Amherst, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Andover, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Arlington, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Ashfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Ashland, . . .	Good.
Globe Hall, . . .	Thomas Duffy, . . .	Attleborough, . . .	Good.
Sunday School Hall, . . .	Second Congregational Church, . . .	Attleborough, . . .	Good.
Page Hall, . . .	E. A. Richardson, . . .	Ayer, . . .	Good.
Williams Hall, . . .	A. G. Williams, . . .	Barre, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Belmont, . . .	Good.
U. S. M. A. A. Hall, . . .	United Shoe Machinery Athletic Association, . . .	Beverly, . . .	Good.
Thomas Talbot Memorial Hall, . . .	Thomas T. Clarke, . . .	Billerica, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Billerica, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Bourne, . . .	Good.
Bates Opera House, . . .	Louis F. Bates, . . .	Braintree, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Braintree, . . .	Good.
George E. Keith, Employees' Hall, . . .	Harold C. Keith, . . .	Brockton, . . .	Good.

SPECIAL HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Lithuanian National Hall,	John Ustupas, . . .	Brockton, . . .	Good.
Y. M. C. A. Hall, . . .	Benjamin F. Pierce, Secretary.	Brockton, . . .	Good.
Beacon Hall, . . .	Arthur Williams, . . .	Brookline, . . .	Good.
Whitney Hall, . . .	S. S. Pierce Co., Charles S. Small, Superintendent.	Brookline, . . .	Good.
Aquinas Hall, . . .	St. Mary's Parish, . . .	Cambridge, . . .	Good.
Brattle Hall, . . .	Cambridge Social Union, . .	Cambridge, . . .	Good.
Institute Hall, . . .	St. John's Literary Institute,	Cambridge, . . .	Good.
Masonic Hall, . . .	Cambridge Masonic Hall Association.	Cambridge, . . .	Good.
New Orpheum, . . .	Mt. Sinai Building Association.	Cambridge, . . .	Good.
Newtowne Club Hall, . .	Secretary of the Newtowne Club.	Cambridge, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Canton, . . .	Good.
Goodnow Hall, . . .	Inhabitants, . . .	Charlemont, . .	Good.
Richards Hall, . . .	Richard Dembrowsky, . . .	Chelsea, . . .	Good.
The Grand, . . .	Aszero Mason, . . .	Chicopee, . . .	Good.
Polish National Home, .	Polish National Home Association.	Chicopee, . . .	Good.
Association Hall, . . .	Concord Hall Association, .	Concord, . . .	Good.
Monument Hall, . . .	Fr. M. J. Flaherty, . . .	Concord, . . .	Good.
Red Men's Hall, . . .	Wigquamps Tribe, Red Men,	Deerfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Easthampton, .	Good.
Oakes Ames Memorial Hall,	Oakes Ames Memorial Hall, Association.	Easton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Enfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Fairhaven, . . .	Good.
Boys' Club, . . .	Thos. Chew, Superintendent,	Fall River, . . .	Good.
Maplewood Hall, . . .	Rev. Edmond Potvin, . . .	Fall River, . . .	Good.
Music Hall, . . .	Masonic Hall Association, Robert W. Hathaway, Treasurer.	Fall River, . . .	Good.
Palace Hall, . . .	Walter L. Bigelow, . . .	Fall River, . . .	Good.
Remington Hall, . . .	H. L. Dodge, Secretary, . .	Fall River, . . .	Good.
St. James' Parish Hall, .	Rev. George D. Harris, . . .	Fall River, . . .	Good.
St. Michael's Hall, . . .	Manuel P. Machado, President.	Fall River, . . .	Good.
St. Peter & St. Paul Parish Hall.	Rev. William H. Curley, . .	Fall River, . . .	Good.
Women's Union Building, .	Mrs. W. H. Jennings, President.	Fall River, . . .	Good.
Morse Opera House, . . .	Holt & Austin, . . .	Franklin, . . .	Good.
Workers' Society Hall, . .	Finnish Workingmen's Society.	Gardner, . . .	Good.
Town Hall, . . .	Town House Committee, . .	Grafton, . . .	Good.
J. B. Moore's Hall, . . .	Greenfield Young Men's Club,	Greenfield, . . .	Good.
Parish Hall, . . .	Second Congregational Church.	Greenfield, . . .	Good.

SPECIAL HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Town Hall, . . .	Inhabitants, . . .	Groton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Harvard, . . .	Good.
Exchange Town Hall, . . .	Inhabitants, . . .	Harwich, . . .	Good.
Loring Hall, . . .	Trustees, Loring Hall Association.	Hingham, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Holden, . . .	Good.
Kasciusko Hall, . . .	Walter Banas, . . .	Holyoke, . . .	Good.
Turn Hall, . . .	Holyoke Turn Verein, . . .	Holyoke, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Hopedale, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Hudson, . . .	Good.
Cole's Opera House, . . .	Belle J. Foster, . . .	Huntington, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Ipswich, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Lancaster, . . .	Good.
City Hall, . . .	Inhabitants, . . .	Lawrence, . . .	Good.
Harugari Hall, . . .	Charles Wolfe, President, . . .	Lawrence, . . .	Good.
Lyra Hall, . . .	Lyra Singing Society, . . .	Lawrence, . . .	Good.
Turn Halle, . . .	Turn Verein Society, . . .	Lawrence, . . .	Good.
Memorial Hall, . . .	Inhabitants, . . .	Lee, . . .	Good.
Sedgwick Hall, . . .	David Welch, . . .	Lenox, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Lenox, . . .	Good.
Stevens Hall, . . .	Ludlow Manufacturing Associates.	Ludlow, . . .	Good.
Columbian Hall, . . .	F. L. Fuller, . . .	Malden, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Mansfield, . . .	Good.
Abbott Hall, . . .	Inhabitants, . . .	Marblehead, . . .	Good.
Sanford Hall, . . .	W. H. Hitchcock, Treasurer, . . .	Medway, . . .	Good.
Memorial Hall, . . .	Inhabitants, . . .	Melrose, . . .	Good.
Nevins Memorial Hall, . . .	Inhabitants, . . .	Methuen, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Middleborough, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Millbury, . . .	Good.
Memorial Hall, . . .	Inhabitants, . . .	Monson, . . .	Good.
Red Men's Hall, . . .	Frank Elmer, . . .	Montague, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Montague, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Nahant, . . .	Good.
Athletic Club Hall, . . .	Athletic Club Association, . . .	Nantucket, . . .	Good.
Casino, . . .	B. B. Hussey, Manager, . . .	Nantucket, . . .	Good.
Lyric Hall, . . .	Suburban Amusement Company.	Natick, . . .	Good.
Bourne Hall, . . .	Lewis A. Holman, Agent, . . .	Needham, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Needham, . . .	Good.

SPECIAL HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Grace House, . . .	Grace Church Society, . . .	New Bedford, . . .	Good.
St. John's Hall, . . .	Rev. M. A. Silva, . . .	New Bedford, . . .	Good.
Sharpshooters' Hall, . . .	Club des Francs-Tireurs, . . .	New Bedford, . . .	Good.
City Hall, . . .	Inhabitants, . . .	Newburyport, . . .	Good.
Bray's Hall, . . .	Melan Bray, Alvord Bros., Agent.	Newton, . . .	Good.
Lincoln Hall, . . .	Casper Cline, Wm. J. Cozens, Agent.	Newton, . . .	Good.
Newton Catholic Club, . . .	Newton Catholic Club, . . .	Newton, . . .	Good.
Memorial Hall, . . .	Commissioner of Public Works.	North Adams, . . .	Good.
Memorial Hall, . . .	Thomas S. Smith, Secretary,	North Attlebor- ough.	Good.
Red Men's Hall, . . .	Merimichi Tribe No. 110, I. O. O. F.	North Attlebor- ough.	Good.
Town Hall, . . .	Inhabitants, . . .	Northfield, . . .	Good.
Columbia Hall, . . .	Rev. Thomas J. MacCormack,	Norwood, . . .	Good.
Everett Hall, . . .	George F. Willett, . . .	Norwood, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Oxford, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Peabody, . . .	Good.
Prescott Hall, . . .	Inhabitants, . . .	Pepperell, . . .	Good.
Tarbell's Hall, . . .	R. E. Tarbell, . . .	Pepperell, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Plainville, . . .	Good.
The Star, . . .	Albert Zerboue, . . .	Provincetown, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Provincetown, . . .	Good.
Alpha Hall, . . .	Henry L. Kincaide, . . .	Quincy, . . .	Good.
Finnish Temperance Hall,	President of Finnish Temper- ance Society.	Quincy, . . .	Good.
Stetson Hall, . . .	Inhabitants, . . .	Randolph, . . .	Good.
Security Lodge Hall No. 208, I. O. O. F.	Odd Fellows Association, . . .	Reading, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Rockport, . . .	Good.
Casino Hall, . . .	M. J. Murphy, . . .	Sandwich, . . .	Good.
Memorial Hall, . . .	Inhabitants, . . .	Shelburne, . . .	Good.
I. O. O. F. Hall, . . .	Fredonian Lodge, I. O. O. F.,	Shirley, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Shrewsbury, . . .	Good.
Congregational Church Hall.	Church Association, . . .	Somerville, . . .	Good.
St. Ann's Hall, . . .	St. Ann's Parish, . . .	Somerville, . . .	Good.
Somerville Auditorium, . . .	Joseph O. Hobbs, . . .	Somerville, . . .	Good.
South Hadley Town Hall, . . .	Inhabitants, . . .	South Hadley, . . .	Good.
The Grand, . . .	N. & H. Flebotte, . . .	Springfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Stockbridge, . . .	Good.
Armory Hall, . . .	Inhabitants, . . .	Stoneham, . . .	Good.
Orpheum, . . .	Anson L. Favor, . . .	Stoughton, . . .	Good.

SPECIAL HALLS — *Concluded.*

NAME.	Licensee.	Location.	General Condition.
Town Hall, . . .	Inhabitants, . . .	Stoughton, . . .	Good.
Music Hall, . . .	M. J. Woodrow, Superintendent.	Sutton, . . .	Good.
I. O. O. F. Hall, . . .	F. E. Wellman, Chairman,	Taunton, . . .	Good.
St. Joseph Parish Hall, . . .	Rev. John W. Quirk, . . .	Taunton, . . .	Good.
Fraternity Hall, . . .	Fraternity Hall Association,	Templeton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Upton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Uxbridge, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Walpole, . . .	Good.
New Orpheum Hall, . . .	Newell D. Johnson, . . .	Waltham, . . .	Good.
Warren Town Hall, . . .	Inhabitants, . . .	Warren, . . .	Good.
Pequosette Hall, . . .	Joseph Randles, Jr., . . .	Watertown, . . .	Good.
St. Patrick's Hall, . . .	St. Patrick's Parish, . . .	Watertown, . . .	Good.
Mangus Club Hall, . . .	Cecil Q. Adams, . . .	Wellesley, . . .	Good.
Grange Hall, . . .	Westborough Grange No. 116, P. of H.	Westborough, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Westborough, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	West Brookfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Westford, . . .	Good.
Fogg Hall, . . .	George O. Crawford, . . .	Weymouth, . . .	Good.
Odd Fellows Opera House,	H. E. Raymond, President, .	Weymouth, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Whitman, . . .	Good.
Opera House, . . .	John Ennis, . . .	Williamstown, . . .	Good.
Grange Hall, . . .	Grange Association, . . .	Wilmington, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Winchendon, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Winchester, . . .	Good.
Columbus Hall, . . .	Thomas J. Butler, . . .	Winthrop, . . .	Good.
Elks Hall, . . .	B. & P. O. Elks No. 1078, .	Winthrop, . . .	Good.
Walnut Hall, . . .	Julius Wright, . . .	Woburn, . . .	Good.
Assembly Hall, . . .	Finnish Temperance Society,	Worcester, . . .	Good.
Finnish Labor Temple, . . .	Finnish Workingmen Society,	Worcester, . . .	Good.
Tuckerman Hall, . . .	Worcester Woman's Club, .	Worcester, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Wrentham, . . .	Good.

PUBLIC HALLS.

Franklin Hall, . . .	David V. Poole, . . .	Abington, . . .	Good.
Standish Hall, . . .	E. P. Boynton, . . .	Abington, . . .	Good.
Exchange Hall, . . .	Finney & Holt, . . .	Acton, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Armory Hall, . . .	A. B. Daniels, . . .	Adams, . . .	Good.
Forest Park Pavilion, . .	C. T. Plunkett, . . .	Adams, . . .	Good.
St. Stanislaus Hall, . .	Wojcieh Les, . . .	Adams, . . .	Good.
Red Men's Hall, . . .	John H. Mullin, . . .	Amherst, . . .	Good.
Old Town Hall, . . .	Arlington Amusement Com- pany.	Arlington, . . .	Good.
Fairbanks Memorial Hall, .	Inhabitants, . . .	Ashburnham, . .	Good.
Athol Skating Rink, . .	Levi C. Swain, . . .	Athol, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Athol, . . .	Good.
Brownell Hall, . . .	Alonzo N. & Mary A. Brownell.	Attleborough, . .	Good.
Pierce Hall, . . .	Alfred Pierce, . . .	Attleborough, . .	Good.
Talauega Park Hall, . .	R. A. Harrington, . . .	Attleborough, . .	Good.
Town Hall, . . .	Inhabitants, . . .	Ayer, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Barre, . . .	Good.
Hoag Lake Dance Hall, . .	Thomas D. Soriero, . . .	Bellingham, . . .	Good.
City Hall, . . .	Inhabitants, . . .	Beverly, . . .	Good.
Odd Fellows Hall, . . .	Josiah Bradstreet, . . .	Beverly, . . .	Good.
Long's Hall, . . .	Theophilus King, . . .	Braintree, . . .	Good.
Lower Town Hall, . . .	Inhabitants, . . .	Braintree, . . .	Good.
Princess, . . .	Charles E. Babb & George F. Nourse.	Bridgewater, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Bridgewater, . . .	Good.
A. O. H. Hall, . . .	McCue & Cahill, . . .	Brockton, . . .	Good.
Canton Hall, . . .	H. G. Pratt, Manager, . . .	Brockton, . . .	Good.
Clark Hall, . . .	Directors of St. Patrick's Total Abstinence Associa- tion.	Brockton, . . .	Good.
Globe Hall, . . .	Frank H. Jaques, . . .	Brockton, . . .	Good.
Gymnasium Hall, . . .	President of Y. M. C. A., . .	Brockton, . . .	Good.
Keith's Hall, . . .	Sanford K. Gurney, . . .	Brockton, . . .	Good.
Massasoit Hall, . . .	Massasoit Lodge No. 69, I. O. O. F., Trustees.	Brockton, . . .	Good.
Smith Hall, . . .	George W. Poole, . . .	Brockton, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Brookfield, . . .	Good.
Gardner Hall, . . .	Trustees of Brookline Elks Club.	Brookline, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Brookline, . . .	Good.
Cypress Hall, . . .	A. B. Reed, . . .	Cambridge, . . .	Good.
Durrell Hall, . . .	Carroll L. Chase, . . .	Cambridge, . . .	Good.
Theatre Comique, . . .	Cambridge Theatre Com- pany.	Cambridge, . . .	Good.
University Athletic Club, .	University Athletic Club, . .	Cambridge, . . .	Good.
Dexter Hall, . . .	Inhabitants, . . .	Charlton, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
North Town Hall, . . .	Inhabitants,	Chelmsford, . . .	Good.
Town Hall,	Inhabitants,	Chelmsford, . . .	Good.
Congress Hall,	Bloomberg Bros.,	Chelsea,	Good.
Grand Army Hall,	Theo. Winthrop Post 35, G. A. R.	Chelsea,	Good.
City Hall,	Inhabitants,	Chicopee,	Good.
A. O. H. Hall,	Division No. 8, A. O. H., . . .	Clinton,	Good.
Turn Verein,	Turn Verein Society,	Clinton,	Good.
Town Hall,	Inhabitants,	Concord,	Good.
Town Hall (lower),	Henry F. Hewitt,	Dalton,	Good.
Institute Hall,	Inhabitants,	Danvers,	Good.
Perry Hall,	James O. Perry,	Danvers,	Good.
Town Hall,	Inhabitants,	Danvers,	Good.
Lincoln Park Casino,	Isaac W. Phelps, Manager, . . .	Dartmouth,	Good.
Memorial Hall,	Inhabitants,	Dedham,	Good.
Moseley's on the Charles,	Elisha H. Moseley,	Dedham,	Good.
Dighton Rock Park Hall,	Bay State Street Railway, . . .	Dighton,	Good.
Dighton Rock Park Moving Picture Show.	Bay State Street Railway, . . .	Dighton,	Good.
Lakview Dancing Hall,	H. C. Kittridge,	Dracut,	Good.
Town Hall,	Inhabitants,	East Bridgewater,	Good.
Town Hall,	Inhabitants,	Easton,	Good.
Murdock's Hall,	Wm. A. Murdock,	Everett,	Good.
Whittier Hall,	Ruth Whittier,	Everett,	Good.
Y. M. C. A. Hall,	James J. Irwin,	Everett,	Good.
Americaine,	Louis Coriaty,	Fall River,	Good.
Amiot Hall,	Joseph E. Amiot,	Fall River,	Good.
Anawan Hall,	Y. M. I. A. C. T. A. & B. So- ciety.	Fall River,	Good.
Boys' Club Gymnasium,	Boys' Club, Thos. Chew, Superintendent.	Fall River,	Good.
Dreamland Hall,	Dreamland Dancing Acad- emy.	Fall River,	Good.
Guarde Napoleon Hall,	Franco-Americaine Union As- sociation.	Fall River,	Good.
Lyric,	Ernest W. Michelfelder,	Fall River,	Good.
New Star Hall,	Ernest W. Michelfelder,	Fall River,	Good.
Polo Casino,	Joseph A. Dennis, Treasurer, . . .	Fall River,	Good.
Sandy Beach Hall,	A. V. DuBois,	Fall River,	Good.
Y. M. C. A. Gymnasium Hall.	Y. M. C. A., H. E. Dodge, . . . Secretary.	Fall River,	Good.
Y. M. P. T. & B. Society Hall.	Y. M. P. T. & B. Society,	Fall River,	Good.
Town Hall,	Inhabitants,	Falmouth,	Good.
Assembly Hall,	Y. M. C. A.,	Fitchburg,	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Con- dition.
Board of Trade Hall, . . .	Board of Trade & Merchants Association.	Fitchburg, . . .	Good.
City Hall,	Inhabitants,	Fitchburg, . . .	Good.
German Progressive Society Hall.	German Progressive Society,	Fitchburg, . . .	Good.
Majestic Moving Picture Hall.	Harry Ascher Theatre Com- pany.	Fitchburg, . . .	Good.
Lakeview Park Dance Hall,	Isabel Ross,	Foxborough, . .	Good.
Atheneum Hall,	Inhabitants,	Framingham, . .	Good.
Casino Hall,	W. H. Trowbridge, . . .	Framingham, . .	Good.
Town Hall,	Framingham Improvement Society.	Framingham, . .	Good.
Lakeside Pavilion, . . .	Bay State Street Railway, .	Freetown, . . .	Good.
Casino Hall,	Abraham Rosenberg, . . .	Gardner,	Good.
Chapel Hall,	First Parish Congregational Society.	Gardner,	Good.
Ranhan Aarre Hall, . . .	Ranhan Aarre Society, . . .	Gardner,	Good.
Town Hall,	Inhabitants,	Gardner,	Good.
Casino Hall,	George O. Stacey,	Gloucester, . . .	Good.
City Hall,	Inhabitants,	Gloucester, . . .	Good.
Malta Hall,	William G. Brown,	Gloucester, . . .	Good.
Old Armory Hall,	Inhabitants,	Gloucester, . . .	Good.
Town Hall,	Inhabitants,	Great Barrington,	Good.
St. James Hall,	Charles H. Keith,	Greenfield, . . .	Good.
Washington Hall,	Inhabitants,	Greenfield, . . .	Good.
Casino Hall,	Bay State Street Railway, .	Groveland, . . .	Good.
Town Hall,	Inhabitants,	Hadley,	Good.
Exchange Hall,	Inhabitants,	Harwich,	Good.
B. P. O. Elks Hall, . . .	Edson W. Noyes, Treasurer, .	Haverhill, . . .	Good.
City Hall,	Inhabitants,	Haverhill, . . .	Good.
Federation Hall,	Boot & Shoe Workers' Union, W. H. Goldthwait, Presi- dent.	Haverhill, . . .	Good.
Lafayette Hall,	Edward J. Carriere,	Haverhill, . . .	Good.
Liberty Hall,	Division No. 14, A. O. H., .	Haverhill, . . .	Good.
Moose Hall,	W. F. French, Secretary, . .	Haverhill, . . .	Good.
Mount Washington Hall, .	Jacob Loosain, President, . .	Haverhill, . . .	Good.
Town Hall,	Inhabitants,	Haverhill, . . .	Good.
Town Hall (lower), . . .	Inhabitants,	Hingham,	Good.
Town Hall (upper), . . .	Inhabitants,	Hingham,	Good.
Town Hall,	Inhabitants,	Holbrook,	Good.
Town Hall,	Inhabitants,	Holliston,	Good.
City Hall,	Inhabitants,	Holyoke,	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Hamilton Hall, . . .	T. R. Howes, . . .	Holyoke, . . .	Good.
Monument Hall, . . .	A. J. Duhamel, . . .	Holyoke, . . .	Good.
St. Jerome Hall, . . .	George F. Fitzgerald, . . .	Holyoke, . . .	Good.
Sons of Herman Hall, . . .	Otto Laudgraf, . . .	Holyoke, . . .	Good.
Turn Verein Hall, . . .	Richard Tauscher, . . .	Holyoke, . . .	Good.
Wakelin Hall, . . .	Uncas Tribe of Red Men, . . .	Holyoke, . . .	Good.
Windsor Hall, . . .	J. H. O'Connell, . . .	Holyoke, . . .	Good.
Wonderland Hall, . . .	Max Suher, . . .	Holyoke, . . .	Good.
Y. W. C. A. Gym Hall, . . .	Mrs. James H. Newton, . . .	Holyoke, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Hopkinton, . . .	Good.
Alveus Hall, . . .	Daniel J. Murphy, . . .	Hull, . . .	Good.
Nantasket Casino, . . .	Edgar H. Emerson, . . .	Hull, . . .	Good.
New Scenic Temple, . . .	William H. Wolfe, . . .	Hull, . . .	Good.
Paragon Dance Hall, . . .	Edgar H. Emerson, . . .	Hull, . . .	Good.
Associate Hall, . . .	Odd Fellows Hall Association, George Hall, Treasurer.	Lawrence, . . .	Good.
F. O. Eagles' Hall, . . .	Charles J. Sharkey, . . .	Lawrence, . . .	Good.
Lexington Hall, . . .	Michael Garvey, . . .	Lawrence, . . .	Good.
Premier Hall, . . .	Toomey & Demara, . . .	Lawrence, . . .	Good.
Saunders Hall, . . .	Charles G. Saunders, Trustee,	Lawrence, . . .	Good.
Star Hall, . . .	George D. Wood, . . .	Lawrence, . . .	Good.
Truell Hall, . . .	W. F. Wholey, . . .	Lawrence, . . .	Good.
Unity Cycle Hall, . . .	J. Conlin, Agent, . . .	Lawrence, . . .	Good.
Y. M. C. A., . . .	Y. M. C. A., . . .	Lawrence, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Leicester, . . .	Good.
Gavin Hall, . . .	W. T. Gavin, . . .	Leominster, . . .	Good.
The Gem, . . .	T. A. McEvoy, . . .	Leominster, . . .	Good.
Kendall Hall, . . .	Inhabitants, . . .	Leominster, . . .	Good.
Olympic Moving Picture Hall, . . .	George P. Wilkinson, . . .	Leominster, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Lexington, . . .	Good.
Associate Hall, . . .	Humphrey O'Sullivan, . . .	Lowell, . . .	Good.
Colonial Hall, . . .	A. G. Pollard, . . .	Lowell, . . .	Good.
Colonial Public Hall, . . .	S. Knopf, . . .	Lowell, . . .	Good.
Corporate Members Association, Catholic.	Edmond J. Gill, . . .	Lowell, . . .	Good.
Donohue's Skating Rink, . . .	Joseph F. Donohue, . . .	Lowell, . . .	Good.
Jewell Hall, . . .	Harpoet & Topjain, . . .	Lowell, . . .	Good.
Kasino, . . .	Cushing & Bunker, . . .	Lowell, . . .	Good.
Lincoln Hall, . . .	Owen Donohue, . . .	Lowell, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Lowell Boys' Club Hall, .	James H. Stewart, Superintendent.	Lowell, . . .	Good.
Memorial Hall, . . .	Inhabitants,	Lowell, . . .	Good.
Owl Public Hall, . . .	Orbach & Scott,	Lowell, . . .	Good.
Premier Hall,	George F. Dunbar & George L. Keeney.	Lowell, . . .	Good.
Prescott Hall,	M. F. Sherwood,	Lowell, . . .	Good.
Royal Hall,	George Husson,	Lowell, . . .	Good.
St. Anne's Parish House, .	Rev. Appleton Grannis, Rector.	Lowell, . . .	Good.
Dance Hall,	W. W. Sargent,	Lunenburg, . .	Good.
Skating Rink,	W. W. Sargent,	Lunenburg, . .	Good.
Casino Hall,	William F. Wholey, . . .	Lynn,	Good.
Donahue Hall,	Dan. A. Donahue,	Lynn,	Good.
East Lynn Odd Fellows Hall.	East Lynn Odd Fellows Association.	Lynn,	Good.
Exchange Hall,	United Shoe Workers of America.	Lynn,	Good.
Lasters' Hall,	Lasters' Association, . . .	Lynn,	Good.
Lyceum Hall,	West Lynn Odd Fellows Association.	Lynn,	Good.
Odd Fellows Hall, . . .	Odd Fellows Association, Frank Bruce, Treasurer.	Lynn,	Good.
Walcott Hall,	Heel Workers' Independent Union.	Lynn,	Good.
Auditorium Banquet Hall,	G. D. Campbell,	Malden, . . .	Good.
Auditorium Dance Hall, .	G. D. Campbell,	Malden, . . .	Good.
Davis Hall,	Carl P. Cubberly Corporation,	Malden, . . .	Good.
Esther Hall,	E. F. Pratt,	Malden, . . .	Good.
Lincoln Hall,	Max Goldstein,	Malden, . . .	Good.
Marie Hall,	E. F. Pratt,	Malden, . . .	Good.
Odd Fellows Banquet Hall,	Odd Fellows Association, .	Malden, . . .	Good.
Odd Fellows Lodge Hall, .	Odd Fellows Association, .	Malden, . . .	Good.
Parish Hall,	First Baptist Church, . . .	Malden, . . .	Good.
Pastime Hall,	George E. Pringle,	Mansfield, . .	Good.
A. O. H. Hall,	Division No. 16, A. O. H., .	Marlborough, .	Good.
Preston Hall,	Walter P. Frye, Agent, . .	Marlborough, .	Good.
St. Jean's Hall,	St. Jean Baptiste Society, .	Marlborough, .	Good.
Ocean Bluff Casino, . . .	F. H. Briggs,	Marshfield, . .	Good.
Colonial Hall,	Thomas Naylor,	Maynard, . . .	Good.
Co-operative Hall, . . .	Riverside Co-operative Association.	Maynard, . . .	Good.
Chenery Hall,	Inhabitants,	Medfield, . . .	Good.
Orpheum Hall,	Ramsdell Bros.,	Medford, . . .	Good.
Pitman Academy,	William W. Pitman,	Medford, . . .	Good.
Melrose Auditorium, . . .	Inhabitants,	Melrose, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Sargent Hall, . . .	Inhabitants, . . .	Merrimac, . . .	Good.
Stanley's on the Merrimack,	Frank J. Stanley, Agent, .	Methuen, . . .	Good.
American (Lyric Moving Picture Hall).	Ivan A. Rodgers, . . .	Middleborough, .	Good.
Dewey Hall, . . .	Inhabitants, . . .	Milford, . . .	Good.
Driving Park Hall, . .	Italian Labor Society, Inc., .	Milford, . . .	Good.
The Ideal, . . .	Eastern Amusement Company.	Milford, . . .	Good.
Knights of Columbus Hall,	Knights of Columbus, . .	Milford, . . .	Good.
Manchester Unity, . .	N. U. Loyal Sears Lodge, I. O. O. F.	Milford, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Milford, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Milton, . . .	Good.
Assembly Hall, . . .	Dr. Everett Flood, Superintendent.	Monson, . . .	Good.
Roderick, The, . . .	John J. O'Shoughnessy, .	Monson, . . .	Good.
Hibernian Hall, . . .	Dennis W. Conway, . . .	Montague, . . .	Good.
Dance Hall, . . .	A. G. Fuller, . . .	Nahant, . . .	Good.
Pavilion Hall, . . .	E. H. Bran, . . .	Nahant, . . .	Good.
Theatorium Hall, . . .	A. G. Fuller, . . .	Nahant, . . .	Good.
Atheneum Hall, . . .	Trustees of Atheneum Association.	Nantucket, . . .	Good.
Concert Hall, . . .	Edward N. Clark, Agent, .	Natick, . . .	Good.
South Hall, . . .	Edward N. Clark, . . .	Natick, . . .	Good.
Arbeiter Liedertafel, .	Arbeiter Liedertafel Society, .	New Bedford, .	Good.
Bohemian Club Hall, .	Bohemian Club, . . .	New Bedford, .	Good.
Brooklawn Pavilion Hall, .	Peter Tomlinson, . . .	New Bedford, .	Good.
Dominique Hall, . . .	George W. Allen, Jr., . . .	New Bedford, .	Good.
Elm Rink, . . .	Joseph A. Burke & Co., .	New Bedford, .	Good.
I. O. O. F. Hall, . . .	E. H. Wefer, . . .	New Bedford, .	Good.
Meaney's Hall, . . .	Manuel J. Senna, Manager, .	New Bedford, .	Good.
Music Hall, . . .	Samuel Tablas, . . .	New Bedford, .	Good.
Phoenix Hall, . . .	Phoenix Hall Association, .	New Bedford, .	Good.
Rochambeau Social Club Hall.	Rochambeau Social Club, .	New Bedford, .	Good.
Thad Koscizyko Hall, .	Thad Koscizyko Society, .	New Bedford, .	Good.
Washington Social Club Hall.	Washington Social & Musical Club.	New Bedford, .	Good.
Winterson's Hall, . . .	P. H. Winterson Heirs, . .	New Bedford, .	Good.
Y. M. C. A. Hall, . . .	Y. M. C. A., . . .	New Bedford, .	Good.
Griffin Hall, . . .	J. H. Ireland, . . .	Newburyport, .	Good.
Music Hall, . . .	R. T. Healey, . . .	Newburyport, .	Good.
Auditorium Hall, . . .	E. M. Ward & M. J. Grady, .	Newton, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Masonic Temple Hall,	Newton Masonic Hall Association.	Newton,	Good.
Norumbega Park,	Carl Alberte,	Newton,	Good.
Odd Fellows Hall,	Odd Fellows, Waban Lodge,	Newton,	Good.
Odd Fellows Hall,	William F. Orr,	North Adams,	Good.
Valley Park Pavilion,	Wm. T. Nary, Superintendent.	North Adams,	Good.
Y. M. C. A. Hall,	A. E. Hoffmire,	North Adams,	Good.
Assembly Hall,	Dr. J. A. Houston,	Northampton,	Good.
Carnegie Hall,	Mrs. H. E. Morrow,	Northampton,	Good.
City Hall,	Inhabitants,	Northampton,	Good.
Masonic Hall,	L. L. Campbell,	Northampton,	Good.
Merrimac Hall,	Rev. John Gallagher,	North Andover,	Good.
Badaraco Hall,	David Badaraco,	North Attleborough.	Good.
Casino Hall,	Edgar R. Starkey,	North Attleborough.	Good.
Emmet Hall,	Walter C. Burt,	North Attleborough.	Good.
Town Hall,	Inhabitants,	Northborough,	Good.
Memorial Hall,	Arthur F. Whitin,	Northbridge,	Good.
Mumford Hall,	Rev. John P. Phelan,	Northbridge,	Good.
The Star,	Joseph Berthiaume,	North Brookfield,	Good.
Town Hall,	Inhabitants,	North Brookfield,	Good.
Premier Hall,	Charles A. Hubbard,	Norwood,	Good.
The Casino Hall,	Cottage City Rink Company,	Oak Bluffs,	Good.
Dreamland Hall,	Oak Bluffs Amusement Company.	Oak Bluffs,	Good.
The Tivoli,	Cottage City Rink Company,	Oak Bluffs,	Good.
Union Hall,	T. F. Clifford,	Palmer,	Good.
Institute Hall,	Inhabitants,	Peabody,	Good.
Small Town Hall,	Inhabitants,	Peabody,	Good.
Town Hall,	Inhabitants,	Pepperell,	Good.
Assembly Hall,	Masonic Association,	Pittsfield,	Good.
Berkshire Spa,	H. H. Durgin,	Pittsfield,	Good.
Boys' Club Gymnasium,	P. A. Jordan,	Pittsfield,	Good.
F. M. T. A. Hall,	William A. Fahey,	Pittsfield,	Good.
Lenox Hall,	B. B. Sullivan,	Pittsfield,	Good.
Maplewood Music Hall,	A. W. Plumb,	Pittsfield,	Good.
Turn Verein Hall,	Paul Burkhart,	Pittsfield,	Good.
Y. M. C. A. Gymnasium,	E. M. Huntress,	Pittsfield,	Good.
Faxon Hall,	Quincy Reform Club,	Quincy,	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
St. Joseph's Hall, . . .	Rev. Henry T. Grady, . . .	Quincy, . . .	Good.
Lyceum Hall, . . .	Lyceum Hall Association, . .	Reading, . . .	Good.
Masonic Temple, . . .	Masonic Association, . . .	Reading, . . .	Good.
Reading Hall, . . .	Edward C. Turnbull, . . .	Reading, . . .	Good.
Banquet Hall, . . .	Inhabitants, . . .	Revere, . . .	Good.
Condit's Dance Hall, . .	F. H. Condit, . . .	Revere, . . .	Good.
Crescent Garden Dance Hall.	Revere Beach Amusement Company, Clarence A. Warren, President.	Revere, . . .	Good.
Nautical Ball Room, . .	Ridgway Construction Company.	Revere, . . .	Good.
Ocean Pier Dance Hall, .	James Cashman, . . .	Revere, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Revere, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Rowley, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Rutland, . . .	Good.
Ames Memorial Hall, . .	Leland H. Cole, President, . .	Salem, . . .	Good.
Casino, . . .	A. J. Kennison, . . .	Salem, . . .	Good.
Chalfour Hall, . . .	James Chalfour, . . .	Salem, . . .	Good.
Circle Veulott Hall, . .	Rev. Rosario Richard, . . .	Salem, . . .	Good.
Comique Hall, . . .	Jacob Alpert, . . .	Salem, . . .	Good.
Now and Then Hall, . .	Now and Then Association, . .	Salem, . . .	Good.
Old Armory Hall, . . .	Edward B. Trumbull, . . .	Salem, . . .	Good.
Plaza Hall, . . .	Plaza Amusement Company, .	Salem, . . .	Good.
Willows Skating Rink, . .	A. J. Kennerson, . . .	Salem, . . .	Good.
The Bijou, . . .	Adolphus I. Brissette, . . .	Salisbury, . . .	Good.
Montgomery Hall, . . .	Allen Bros., . . .	Salisbury, . . .	Good.
Dream Hall, . . .	Robert Downing, . . .	Saugus, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Saugus, . . .	Good.
Dance Hall, . . .	Lakeside Construction Company.	Shrewsbury, . .	Good.
Rollerdrome, . . .	A. W. Nichols, . . .	Shrewsbury, . .	Good.
Anthoine Hall, . . .	Mrs. E. L. Grant, . . .	Somerville, . . .	Good.
Bacon Hall, . . .	Herbert Jay, . . .	Somerville, . . .	Good.
Broadway Hall, . . .	Charles A. Barnes, . . .	Somerville, . . .	Good.
Columbus Hall, . . .	K. of C. Building Association, .	Somerville, . . .	Good.
Eberle Hall, . . .	Philip Eberle, . . .	Somerville, . . .	Good.
Highland Hall, . . .	K. of C. Building Association, .	Somerville, . . .	Good.
Odd Fellows Hall, . . .	Arthur G. Pearson, . . .	Somerville, . . .	Good.
Union Square Hall, . . .	Arthur G. Pearson, . . .	Somerville, . . .	Good.
Union Square Olympia, . .	Lord and Drown, . . .	Somerville, . . .	Good.

PUBLIC HALLS — *Continued.*

NAME.	Licensee.	Location.	General Condition.
Y. M. C. A., . . .	Y. M. C. A., . . .	Somerville, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Southborough, . . .	Good.
Airdome Hall, . . .	Morris Green, . . .	Southbridge, . . .	Good.
Association Hall, . . .	Donald McNicol, General Secretary.	Southbridge, . . .	Good.
Edwards Hall, . . .	Calvin D. Paige, Trustee, . . .	Southbridge, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Southbridge, . . .	Good.
Alpha Dance Hall, . . .	Jerome D. Stewartson, . . .	Springfield, . . .	Good.
A. O. H. Hall, . . .	Sylvester P. Callahan, . . .	Springfield, . . .	Good.
Apollo Hall, . . .	Pascal L. Morse, . . .	Springfield, . . .	Good.
Graves Hall, . . .	George A. Graves, . . .	Springfield, . . .	Good.
The Lyon, . . .	K. L. Johnson & Max Edelson, . . .	Springfield, . . .	Good.
The Mirror, . . .	W. A. Graves, . . .	Springfield, . . .	Good.
Municipal Auditorium Hall, . . .	George S. Cook, Chairman, City Property Committee, . . .	Springfield, . . .	Good.
New Edisona Hall, . . .	J. B. Thomas, Manager, . . .	Springfield, . . .	Good.
Novelty, . . .	L. N. Cushman, . . .	Springfield, . . .	Good.
Touraine Hall, . . .	A. H. Goetting, . . .	Springfield, . . .	Good.
Auditorium Hall, . . .	James E. Maurakos, . . .	Taunton, . . .	Good.
Broadway Rink, . . .	Fred W. Hayman, . . .	Taunton, . . .	Good.
Casino, . . .	Donovan & Walker, . . .	Taunton, . . .	Good.
Star, . . .	Leonard Bros., . . .	Taunton, . . .	Good.
Whittenton Casino, . . .	LePlante & Lamoureux, . . .	Taunton, . . .	Good.
Leland Hall, . . .	George S. Stone, . . .	Templeton, . . .	Good.
Memorial Hall, . . .	Inhabitants, . . .	Townsend, . . .	Good.
Cubberly Dance Hall, . . .	Cubberly Corporation, . . .	Wakefield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Wakefield, . . .	Good.
Elite Hall, . . .	William P. Kelly, . . .	Walpole, . . .	Good.
Lincoln Hall, . . .	E. W. Graves, . . .	Waltham, . . .	Good.
Maynard Hall, . . .	Hagar Bros., . . .	Waltham, . . .	Good.
Nuttings on the Charles, . . .	Nutting Pillman Amusement Company, . . .	Waltham, . . .	Good.
Arcade, . . .	George A. Fuller, Treasurer, . . .	Wareham, . . .	Good.
Colonial Casino, . . .	N. R. Besse, . . .	Wareham, . . .	Good.
Colonial Hall, . . .	Cape Amusement Company, . . .	Wareham, . . .	Good.
New Onset, . . .	Edward A. King, . . .	Wareham, . . .	Good.
Temple, . . .	George A. Fuller, Treasurer, . . .	Wareham, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Wayland, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	Wellesley, . . .	Good.
Chauncy Hall, . . .	Matthew J. Comiskey, . . .	Westborough, . . .	Good.

PUBLIC HALLS — *Concluded.*

NAME.	Licensee.	Location.	General Condition.
Columbia Hall, . . .	Fred Schmidt, . . .	Westfield, . . .	Good.
New Nickle, . . .	E. P. McCarthy, . . .	Westfield, . . .	Good.
Empire Hall, . . .	Albert U. Stebbins, . . .	West Springfield, . . .	Good.
Mittineague Y. M. C. A., . . .	Mittineague Y. M. C. A., . . .	West Springfield, . . .	Good.
Town Hall, . . .	Inhabitants, . . .	West Springfield, . . .	Good.
Music Hall, . . .	Warren T. Simpson, Agent, . . .	Weymouth, . . .	Good.
Banquet Hall, . . .	Inhabitants, . . .	Whitman, . . .	Good.
Empire Hall, . . .	Leo F. Nourse, . . .	Whitman, . . .	Good.
National Hall, . . .	National Club, . . .	Winchendon, . . .	Good.
Lyceum Hall, . . .	George A. Fernald & Co., . . .	Winchester, . . .	Good.
Waterfield Hall, . . .	E. J. Butler, Trustee, . . .	Winchester, . . .	Good.
Winthrop Beach Casino, . . .	W. F. Dealey, Treasurer, . . .	Winthrop, . . .	Good.
Winthrop Yacht Club Hall, . . .	Winthrop Yacht Club, . . .	Winthrop, . . .	Good.
Knights Hall, . . .	St. Charles Temperance Society, . . .	Woburn, . . .	Good.
Mechanics' Hall, . . .	L. W. Fowle, . . .	Woburn, . . .	Good.
Music Hall, . . .	A. J. Foster, . . .	Woburn, . . .	Good.
Alhambra Hall, . . .	K. of C. R. E. C. & B. Association, . . .	Worcester, . . .	Good.
A. O. H. Hall, . . .	Trustees, A. O. H. Building Association, . . .	Worcester, . . .	Good.
Baneroft Ball Room, . . .	C. S. Averill, . . .	Worcester, . . .	Good.
Beaver Hall, . . .	N. P. Huot, . . .	Worcester, . . .	Good.
Bijou Hall, . . .	Joseph Fidelis & James Grecko, . . .	Worcester, . . .	Good.
Casino Hall, . . .	Casino Company, Inc., . . .	Worcester, . . .	Good.
Columbus Moving Picture Hall, . . .	Rose Maggi & James J. Grecko, . . .	Worcester, . . .	Good.
Dance Hall, . . .	Lincoln Park Amusement Company, . . .	Worcester, . . .	Good.
Dodge Hall, . . .	Odd Fellows' Charitable Association, . . .	Worcester, . . .	Good.
Family Hall, . . .	Gordon Bros. Amusement Company, . . .	Worcester, . . .	Good.
Father Matthew Hall, . . .	Father Matthew Temperance Association, . . .	Worcester, . . .	Good.
Gem Hall, . . .	Murphy & O'Shea, . . .	Worcester, . . .	Good.
Horticultural Hall, . . .	Worcester County Horticultural Society, . . .	Worcester, . . .	Good.
Lincoln, . . .	John W. Huff, . . .	Worcester, . . .	Good.
Mechanics' Hall, . . .	Worcester Mechanics' Association, . . .	Worcester, . . .	Good.
Skating Rink, . . .	Lincoln Park Amusement Company, . . .	Worcester, . . .	Good.
Terpsichorean Hall, . . .	Mrs. A. H. Day, . . .	Worcester, . . .	Good.
Vestry Hall, . . .	Grace Methodist Church Society, . . .	Worcester, . . .	Good.
Washburn Hall, . . .	Worcester Mechanics' Association, . . .	Worcester, . . .	Good.
Lake Pearl Dance Hall, . . .	William L. Enegren, . . .	Wrentham, . . .	Good.

REGULATIONS RELATIVE TO EXPLOSIVES AND INFLAMMABLE FLUIDS AND COMPOUNDS.

Regulations governing the Maintenance and Construction of Garages, taking Effect May 15, 1914.

In accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto, the Detective and Fire Inspection Department of the District Police hereby adopts and prescribes the following regulations governing the construction and maintenance of garages and the storage and handling of volatile inflammable liquid in connection therewith. These and all regulations, and amendments thereto, adopted and prescribed by the Detective and Fire Inspection Department of the District Police do not apply to the Metropolitan District as defined in section 1, chapter 795, Acts of 1914.

CHAPTER 1.

Definitions.

SECTION 1. "Garage" shall mean a building or other structure, or any portion thereof, wherein is kept or housed one or more motor vehicles charged with or containing a volatile inflammable liquid for fuel or power, or wherein is conducted the business of repairing motor vehicles.

SECTION 2. "Motor vehicle" shall mean any vehicle with more than two running wheels, charged with or containing a volatile inflammable liquid for fuel or power.

SECTION 3. "Volatile inflammable liquid" shall mean any liquid that will emit an inflammable vapor at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 4. "Unpierced fire walls, floor and ceiling" shall mean walls constructed either of brick, stone, cement concrete, hollow tile or cement blocks covered with cement mortar not less than three-quarters of an inch in thickness, or metal lath and hard plaster not less than one and one-half inches in thickness supported by angle iron frame; floor constructed of cement concrete not less than three inches in thickness; and ceiling constructed of metal lath and hard plaster not less than three-quarters of an inch in thickness. All to be without openings of any kind therein except for piping or electrical conduits, which shall be sealed in the wall air-tight.

SECTION 4 A. "Fire limits" shall mean the limits fixed by any city or town government within which no wooden frame structure may be built and no building may have a shingled roof.

CHAPTER 2.

Licenses and Permits.

SECTION 5. No person shall conduct or maintain a garage or keep or store any volatile inflammable liquid in connection therewith unless a license and a permit have been obtained therefor in accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto.

SECTION 6. Applications for permits to conduct or maintain garages, or to keep or store volatile inflammable liquid in connection therewith, shall be made in writing to the Chief of the District Police, or to the official designated by him to grant such permits, upon forms to be furnished by the Chief of the District Police. A permit shall not be granted until a license has been obtained from the mayor and aldermen of a city or the selectmen of a town.

SECTION 7. Each application for a permit to conduct or maintain a garage shall be accompanied by a plan of the premises.

SECTION 8. All licenses and permits provided for in these regulations must be conspicuously posted, under glass, upon the premises.

SECTION 9. The Chief of the District Police, or the official granting the permit, may revoke the same for cause, after due notice and hearing.

CHAPTER 3.

Location and Construction of Garages.

SECTION 10. When any portion of a building, or other structure, is used as a garage, the garage shall be deemed to embrace all of the building not separated therefrom by unpierced fire walls, floors and ceilings.

SECTION 11. No building or other structure shall be used as a garage:—

(a) That is situated within fifty feet of the nearest wall of a building occupied as a hotel exceeding two stories in height, hospital, school, theatre, or other place of public amusement or assembly: *provided, however*, that the provisions of this section shall not apply to buildings in use as garages previous to the date of these regulations, except in cases where, in the opinion of the Chief of the District Police, the conditions are hazardous.

(b) That is occupied in any part as a dwelling, tenement or lodging house, hospital, school, or as a place of public amusement or assembly: *provided, however*, that a building in which is located a garage containing not more than four motor vehicles, which are the property of the applicant or of his immediate family, and which are not let out for hire, may be used in part as a dwelling, if the portion so used is not located above the third story, is entirely sep-

arated from the garage by an unpierced fire wall, floor and ceiling, has a separate entrance from the outside air, and has all windows directly above any opening in the garage of wireglass, with metal sashes and frames; but such part shall only be occupied as a dwelling by the applicant or his employee, and family. No volatile inflammable liquid shall be kept in the garage except such as is in the tanks of the motor vehicles, unless such building is of fireproof construction throughout.

(c) In any part of which paints, varnishes or lacquers are manufactured, stored or kept for sale.

(d) In any part of which dry goods or other highly inflammable materials are manufactured or kept for sale.

(e) In any part of which resin, turpentine, hemp, cotton, gun-cotton, smokeless powder, blasting powder or any other explosives are stored or kept for sale.

SECTION 12. Except as provided in the previous section, all garages shall be located and constructed in accordance with the following classification:—

(a) First-class garages may be located in any city or town; shall have the walls, partitions, floors and roof constructed of brick, cement concrete or some other equally substantial fireproof material; the stairs of iron or cement concrete; the doors, standard fire doors; all trim or other interior finish of metal or wood covered with metal; and all windows exposing other buildings within a distance of twenty feet, fitted with wireglass, metal sashes and frames.

(b) Second-class garages may be located in any city or town; shall not exceed one story in height without a special permit from the Chief of the District Police; shall have walls of brick, cement concrete or some other equally substantial fireproof material; a fire-resisting roof covering; a ceiling of metal lath and hard plaster, not less than three-quarters of an inch in thickness; a cement concrete floor; all trim or other interior finish of metal or of wood covered with metal; and all windows exposing other buildings within a distance of twenty feet, fitted with wireglass, metal sashes and frames.

(c) Third-class garages shall be located outside of the fire limits of any city or town, and not less than twenty feet from any building not exceeding three stories in height, nor less than fifty feet from any building more than three stories in height; shall have the capacity for housing not exceeding four motor vehicles; shall have walls on the interior and ceiling covered with sheet steel or metal lath and cement plaster, and shall have a cement concrete floor. Such garages may, however, be constructed with walls and roof of galvanized sheet steel not less in thickness than No. 26 U. S. gauge, or some other equally substantial non-combustible material approved

by the Chief of the District Police, but either of such methods of construction must be supported by an iron frame: *provided, however*, that if the Chief of the District Police or the official granting the permit shall consider either of the above constructions dangerous to other buildings, such garage shall be of first or second class construction, as the said Chief or official shall direct.

(d) Fourth-class garages shall be located outside of the fire limits of any city or town, and not less than fifteen feet from any building not exceeding three stories in height, nor less than forty feet from any building more than three stories in height; shall have a capacity for keeping or housing not more than one motor vehicle, and shall have a cement concrete floor: *provided, however*, that if the Chief of the District Police or the official granting the permit shall consider such structure will endanger other buildings, such garage shall be of second or third class construction, as the said Chief or official shall direct.

(e) Fifth-class garages shall be located outside of cities and outside of the fire limits of any town, and not less than one hundred feet from any other building not owned or controlled by the owner of such garage; shall have a capacity for keeping or housing not more than two motor vehicles and shall have a non-combustible floor. Such garages may be conducted without a license or a permit, but shall be subject to the provisions of these regulations as to operation and maintenance.

(f) Sixth-class garages may be located in any city or town, not less than ten feet from any building not exceeding three stories in height, nor less than forty feet from any building more than three stories in height; shall have the capacity for housing not more than two motor vehicles; shall not exceed one story in height; shall have walls and roof constructed with iron or steel frame, covered with galvanized sheet steel not less in thickness than No. 26 U. S. gauge, or some other equally substantial non-combustible material approved by the Chief of the District Police, either of which shall be securely bolted or locked to the steel frame. All windows exposing other buildings within a distance of fifteen feet shall be fitted with wire-glass, metal sashes and frames; all doors shall be standard fire doors, and the floor shall be cement concrete. No exposed woodwork shall be allowed on the interior or exterior: *provided, however*, that if the Chief of the District Police or the official granting the permit shall consider such structure will endanger other buildings, it shall be of second-class construction as the said Chief or official shall direct.

SECTION 13. Garages of the third and fourth classes may be located nearer to other buildings than the distances specified in their classification, provided that the walls of buildings exposed by the

garage are of fireproof construction without openings of any kind therein.

SECTION 14. On and after the date of these regulations, except as otherwise provided by statute, or by section twenty-five of these regulations, all buildings used as garages shall conform in location and construction to the provisions of the three preceding sections: *provided, however*, that the said provisions (with the exception of (b) of section 11) shall not apply to buildings used as garages that existed previous to the said date, but such buildings shall be changed in construction as provided in section 26.

SECTION 15. In any case where a building is divided by an unpierced fire wall from the foundation to one foot above the roof, each portion of such structure so separated shall be considered a building.

SECTION 16. All stairways or elevator wells and all air or light shafts in a garage shall be enclosed in fire-resisting walls or partitions; and all elevator and stairway openings shall be protected with standard automatic closing fire doors, which shall be kept closed except when the openings are being used; except as otherwise provided in (c) of section twenty-six.

SECTION 17. Wireglass in windows or skylights of garages shall not be less than one-quarter of an inch in thickness, with wire mesh not more than seven-eighths of an inch and wire not smaller than No. 24 B. & S. gauge.

SECTION 18. All skylights in a garage, located within twenty feet of any building of greater height than such garage, shall be of wireglass, with metal sashes and frames.

SECTION 19. No pit shall be allowed in the floor of any garage or repair shop.

SECTION 20. All basements used for the storage of motor vehicles shall have one or more independent exits therefrom direct to the outside air, for use in case of fire.

SECTION 21. No portion of a building below the street level shall be used for the storage or handling of volatile inflammable liquid, nor as a repair shop for the business of repairing motor vehicles, unless so situated or constructed as to allow a free and natural floor ventilation sufficient to remove all vapor therefrom: *provided, however*, that any portion of a building which is of fireproof construction throughout may be used for the business of repairing motor vehicles.

SECTION 22. Except as otherwise provided by statute, no building or part thereof, inside of the fire limits of any city or town, shall hereafter be converted into a garage and used as such, unless such building or part thereof shall be of fireproof construction throughout; and no building or part thereof hereafter converted to

such purpose, outside of the fire limits of cities or towns, shall be used as a garage unless made fire-resisting by covering the walls on the interior and the ceiling of such garage with metal lath and hard plaster, not less than three-quarters of an inch in thickness; such garages shall have cement concrete floors, and shall otherwise be in accordance with these regulations.

SECTION 23. No garage shall be maintained in a building any part of which is used for the stabling or shelter of horses or cattle, unless the part so used shall have a separate exit to the outside air, and no connection whatever shall be maintained between the said stable and the garage; and where horses or cattle are stabled or sheltered above the garage, such stable shall be separated from the garage by unpierced fire walls, floor and ceiling, and shall have separate exit to the outside air. And, if in the judgment of the Chief of the District Police, the conditions are such as to endanger the safety of the horses or cattle in case of fire in such building, he may order that a system of automatic sprinklers shall be installed therein.

SECTION 24. No garage shall exceed ten thousand square feet in floor area on any one floor, unless otherwise authorized by a special permit granted by the Chief of the District Police.

SECTION 25. The Chief of the District Police may authorize the construction and maintenance of garages in isolated portions of towns, in such manner and in such locations as in his judgment the situation may require, when such garages are for public convenience.

CHAPTER 4.

Existing Garages.

SECTION 26. On or before Oct. 1, 1914, all existing buildings or other structures in any city or town used as garages, with capacity for housing more than four motor vehicles, shall be made to comply with the following requirements:—

(a) The floor of the first story shall be covered with cement concrete not less than three inches in thickness.

(b) All first story ceilings of garages that are more than one story in height, if constructed of combustible material, shall be covered with metal lath and hard plaster not less than three-quarters of an inch in thickness.

(c) All stairways and elevator wells leading upward from the first story shall be enclosed in partitions covered with metal lath and hard plaster not less than three-quarters of an inch in thickness, or sheet steel well lapped and securely nailed, or with some other fire-resisting material.

(d) All doorways in said partitions to be fitted with standard automatic closing fire doors.

(e) All windows in exterior walls, which expose dwelling houses,

hotels, mills, factories, or places of public assembly within twenty feet, shall be fitted with wireglass and metal sashes and frames, or closed up solid with fireproof material.

(f) If the Chief of the District Police, or the official designated by him, so directs, any building of more than two stories in height, having a wooden interior in which a public garage is maintained, shall have a sprinkler system installed throughout the building, except in such part as may be separated from the garage by unpierced fire walls and floors.

CHAPTER 5.

Motor Vehicle Repair Shops.

SECTION 27. A repair shop may be conducted in a building with a garage, if separated therefrom by non-combustible partitions, with the openings into the garage protected by standard automatic fire doors.

SECTION 28. No torch, forge, fire, flame nor electrical apparatus capable of emitting an exposed spark shall be used or maintained in a building containing a garage or a motor vehicle repair shop, except used or maintained in a separate fireproof room in which no volatile inflammable liquid is kept, and the entrance to which is direct from the outer air, or through a vestibule constructed of non-combustible material with standard self-closing fire doors not less than four feet apart, and with an opening on one side of such vestibule at the floor level direct to the outer air not less than three feet in height and four feet in width: *provided*, that nothing in this section shall prevent the use of safety matches in a garage for lighting the lamps on motor vehicles at night.

SECTION 29. No volatile inflammable liquid shall be kept, sold or used in a motor vehicle repair shop. This section shall not apply to volatile inflammable liquid in the tanks of motor vehicles which are in such shop for repairs.

CHAPTER 6.

Artificial Lighting and Heating.

SECTION 30. No system of artificial lighting, other than incandescent vapor-proof electric lights, shall be installed in any garage, such lights to be fitted with keyless sockets; and all electric switches and plugs shall be placed at least four feet above the garage floor. Movable incandescent lights in a garage or motor vehicle repair shop shall be protected by vapor-tight double globes, surrounded by strong metal cages.

SECTION 31. Artificial heating of a garage shall be by steam or hot water system, and all heating plants shall be installed in rooms

separated from the garage by unpierced fire walls, floor and ceiling, with an entrance from the outside only. No other system shall be used or allowed unless approved in writing by the Chief of the District Police.

CHAPTER 7.

Operation and Maintenance of Garages.

SECTION 32. Sawdust shall not be used for absorbing oils in a garage.

SECTION 33. There shall be constantly kept and maintained on the floors of every garage convenient receptacles filled with sand, to be used in absorbing waste oils from the floors, and there shall be at least one fire bucket, filled with sand and provided with hand scoops, for every five hundred square feet of floor area or fraction thereof, to be used for fire extinguishing purposes only.

SECTION 34. All garages shall be kept clean, and the floor free from oils, oily waste or rags. Each floor shall be furnished with a sufficient number of self-closing metal cans, and all inflammable waste material shall be placed therein and removed daily from the building.

SECTION 35. A chemical fire extinguisher of not less than two and one-half gallons capacity, or chemical fire extinguishers equal thereto in efficiency and approved by the Chief of the District Police or the official granting the permit, shall be furnished for each one thousand square feet of floor surface, or fraction thereof.

SECTION 36. No person shall smoke in a garage, and notices to that effect shall be conspicuously posted at the entrance of and in the garage.

SECTION 37. There shall be preserved a space of not less than eighteen inches between the outer edges of the mud guards of motor vehicles, when lined up in a garage.

SECTION 38. No locker constructed of wood shall be allowed in a garage.

SECTION 39. No volatile inflammable liquid shall be put into or taken out of a motor vehicle where there is an open light, and all lights on a motor vehicle must be extinguished and the engine stopped before filling the tank. If any volatile inflammable liquid is accidentally spilled in a motor vehicle or on the floor or ground during the process of filling, it shall be cleaned up, allowed to evaporate, or the motor vehicle moved by hand to a place of safety, before relighting the lamps and starting the engine.

SECTION 40. No volatile inflammable liquid shall be carried about or remain in an open receptacle in any garage.

SECTION 41. No volatile inflammable liquid shall be used in a garage for cleaning or for any other purpose than the filling of the tanks of motor vehicles, motoreycles or motortricycles.

CHAPTER 8.

Storage and Handling of Volatile Inflammable Liquid.

SECTION 42. Except as otherwise provided, where practicable, tanks for the storage of volatile inflammable liquid shall be installed outside of buildings underground, on a solid foundation entirely surrounded by earth, well tamped in place, the top of the tank to be not less than two feet below the surface of the ground.

SECTION 43. A tank containing volatile inflammable liquid, if within ten feet of a building having a cellar or basement, and not placed below the level of the floor of such cellar or basement, shall be embedded and entirely surrounded by not less than ten inches in thickness of Portland cement concrete.

SECTION 44. If impracticable to locate a storage tank outside of a building, it may be placed underground inside of the building not less than two feet below the level of the surface of the ground.

SECTION 45. No tank in excess of two hundred and eighty gallons in capacity shall hereafter be installed underground inside of a building having a basement, or more than one story in height, unless such building is of fireproof construction.

SECTION 46. No tank with a capacity greater than five hundred and fifty gallons shall be installed underground on the premises of any public or private garage, unless a special permit has been granted therefor by the Chief of the District Police.

SECTION 47. Underground storage tanks of more than sixty gallons capacity and less than two hundred and eighty gallons capacity must be constructed of No. 12 gauge galvanized steel or three-sixteenths inch black steel.

SECTION 48. Tanks in excess of two hundred and eighty gallons capacity shall be constructed of not less than three-sixteenths inch galvanized steel or one-quarter inch black steel.

SECTION 49. Tanks shall be riveted, welded or brazed, and shall be soldered or caulked to make them tight and strong.

SECTION 50. Tanks shall be thickly covered with asphaltum or some other rust-resisting material.

SECTION 51. Where two or more tanks are installed underground inside of a building, and located less than three feet apart, there shall be a dividing wall between them of cement concrete not less than ten inches in thickness.

SECTION 52. No tank shall hereafter be placed under a sidewalk, or in front of the building line of a street.

SECTION 53. Storage tanks shall be filled from a tank wagon in the daytime.

SECTION 54. Each storage tank must be provided with a filling pipe, a draught pipe, a vent pipe, and may have a gauge pipe, the

opening to which, when the tank is located in a basement, shall be protected, preferably by some safety self-closing device: *provided, however*, that in case of a storage tank installed as part of the hydraulic system no vent pipe shall be required.

SECTION 55. All pipes shall lead from the top of tanks, and the top of all tanks shall be below the level of the lowest pipe used in connection therewith, except piping on the inside of tanks and the water pipe of a hydraulic system.

SECTION 56. All pipes connected with a tank for the storage of volatile inflammable liquid shall be of galvanized wrought-iron or steel, and shall have malleable fittings, and all screw joints shall be made up with litharge and glycerine.

SECTION 57. All pipes used for the conveyance of volatile inflammable liquid must decline to tanks without traps or pockets, and shall be protected against mechanical injury.

SECTION 58. Filler pipes must be made of galvanized iron not less than one and one-quarter inch in diameter, and extend to within two inches of the bottom of the tank, except in hydraulic storage system.

SECTION 59. The outer end of the filler pipe must terminate in a screw or close-fitting cap kept securely locked when not in use.

SECTION 60. Where tanks are located under the building, the filler pipe must run to the outside of such building.

SECTION 61. Where a filler pipe runs to a sidewalk, alley or public highway, it must terminate in a screw or close-fitting cap, and be protected by a cast-iron filler box with iron cover, set flush with the surface of the sidewalk at the curb, alley or highway, to be kept locked when not in use.

SECTION 62. The vent pipe shall be of galvanized wrought-iron, not less than one inch in diameter, and shall run from the top of the tank to at least four feet above the roof of the building, except as otherwise provided in section 65.

SECTION 63. A vent pipe shall terminate not less than ten feet from all openings in higher adjacent buildings with a double goose-neck opening downward, the openings to be covered with a brass wire screen not coarser than 30-mesh.

SECTION 64. Two or more vent pipes may be connected with one upright, provided they are connected at a point one foot or more above the supply filling pipe.

SECTION 65. When a tank is located not less than ten feet from any building, a combination filling and vent pipe so equipped as to vent the tank when necessary may, in the discretion of the official granting the permit, be used.

SECTION 66. Volatile inflammable liquid, except where the hy-

draulic system is allowed, shall be drawn from the tank by means of a suction pump which shall have a shut-off valve with a ground key on the nozzle. The pump or drawing-off device may be located on the floor of the garage in a well-ventilated portion thereof. In no case shall there be a return waste pipe to the tank.

SECTION 67. No volatile inflammable liquid from a storage tank shall be delivered to a motor vehicle in a public garage, nor in a garage containing more than four motor vehicles, except by means of a portable tank, or directly through the outlet of the drawing-off pipe.

SECTION 68. Each portable tank used in a garage shall be of a capacity not exceeding fifty-five gallons; it shall be mounted on a substantial iron or steel frame with rubber-tired wheels, and the liquid shall be discharged from the tank only through a hose not exceeding sixteen feet in length having a shut-off valve close to the outlet or nozzle.

SECTION 69. No volatile inflammable liquid shall be allowed to flow upon the floor or to pass into the drainage system of a garage.

SECTION 70. All pipes passing through basements from a tank containing volatile inflammable liquid shall be enclosed in cement concrete not less than four inches in thickness, and, when practicable, such pipes shall be placed next to the wall: *provided, however*, that in installations where it may be necessary to gain future access to a cylinder or connections thereof, the draught pipe may be enclosed in a tight metal tube, without joints between floors, and with each end embedded in a metal box containing cement plaster; hand-holes may be cut in the outer pipe for convenience in adjustments, but the said hand-holes shall be tightly closed by an iron cover and a rubber fabric gasket tightly screwed in place, making a vapor-tight receptacle.

SECTION 71. No wagon or other vehicle engaged in the delivery of volatile inflammable liquid shall be admitted to any portion of a garage.

SECTION 72. No pump for the delivery of volatile inflammable liquid shall be located above the street floor, and such liquid shall not be delivered to the tank of a motor vehicle nor handled above the street floor unless the garage is of fireproof construction throughout, except the windows and doors.

SECTION 73. No volatile inflammable liquid shall be used for motive power for any stationary engine in a garage.

SECTION 74. Not more than five gallons of volatile inflammable liquid shall be kept in a garage at any one time, except such as may be in the storage tank, portable filling tank or the tanks of motor vehicles; such liquid shall be kept in a closed container which, with

all utensils used therewith in the process of filling the tanks of motor vehicles, shall be placed in a fireproof closet with a self-closing door, and such closet shall be ventilated at the base to the outer air.

CHAPTER 9.

Motor Vehicle Accessories.

SECTION 75. Not more than one hundred and twenty pounds of calcium carbide, in the aggregate, shall be stored in a garage at any one time, and such calcium carbide shall be kept in water-tight metal containers elevated not less than six inches above the floor level, and the covers thereof kept securely fastened.

SECTION 76. Not more than one thousand cubic feet of compressed acetylene gas in detached tanks, in the aggregate, shall be stored in a garage at any one time, and at pressures not exceeding two hundred and fifty pounds per square inch.

CHAPTER 10.

Miscellaneous.

SECTION 77. The mayor and aldermen of a city or the selectmen of a town may make restrictions additional to those contained in these regulations relative to the location and construction of buildings used as garages, which, if approved by the Detective and Fire Inspection Department of the District Police, shall become operative within the jurisdiction of such city or town.

SECTION 78. All garages and the manner of keeping, storing or use of volatile inflammable liquid in connection therewith, and all permits granted under these regulations, shall be subject to the inspection of any member of the District Police or to members of police or fire departments in their respective districts.

SECTION 79. These regulations shall take effect on the fifteenth day of May, 1914, except section 26 of chapter 4, which shall take effect on the first day of October, 1914.

J. H. WHITNEY,
Chief of District Police.

FRICTIONAL ELECTRICITY AND GASOLINE.

[From the Detective and Fire Inspection Department of the District Police, relative to the prevention of fire caused by the generation of frictional electricity during the handling of gasoline.]

Recent fires in garages, caused by frictional electricity during the handling of gasoline, have prompted the department to institute exhaustive research to ascertain the true cause, and to devise a practical remedy therefor.

Frictional or static electricity is more liable to be generated when the atmosphere is clear and dry, than when it is moist.

It is generated by the rubbing together of substances that in themselves are nonconductors of electricity, such as dry wood, rubber or gasoline; or it may be generated by friction between a nonconductor and a conductor, such as gasoline and a metal pipe, although in the latter the intensity is much diminished.

In the drawing of gasoline from a pump into a metal can, no can should be used that has a wooden bail or handle in such a manner that the wood will intervene between the metal of the can and that of the pump on which it is hung.

In filling the tank of a motor vehicle with gasoline from a metal can, care should be taken that good metallic connection exists not only between the tank and other metallic parts of the vehicle, but between the funnel and the tank as well. The pouring can should have a piece of copper chain soldered to the nozzle, the other end to rest in metallic connection with the tank or the funnel during filling.

Motor vehicles that are filled by means of a hose direct from a storage tank or a portable tank should have hose with a continuous metallic lining which is in good metallic connection with the pump at one end and the shut-off nozzle at the other end, or with bare copper wire inside of the hose with like connections at both ends.

Shut-off nozzles at the end of hose lines should be fitted with copper chain to rest on the car tank in metallic connection during filling, or with a metal clamp serving the same purpose.

The passage of gasoline through a chamois skin strainer has been found to generate electricity which is collected in the metal parts of the funnel in dangerous intensity, and the substitution of a funnel with a strainer of 80 or 90 mesh wire which will exclude water is recommended.

Safety lies in maintaining good metallic connection between the storage tank and the tank of the motor vehicle during the process of filling, so that all electricity generated may readily pass off to the ground as fast as generated.

Regulations governing the Manufacture, Storage and Keeping for Sale of Inflammable Compound, taking Effect May 1, 1914.

In accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto, the Detective and Fire Inspection Department of the District Police hereby adopts and prescribes the following regulations governing the manufacture, storage and keeping for sale of inflammable compound, and the storage and handling of volatile inflammable liquid in connection therewith.

CHAPTER 1.

Definitions.

SECTION 1. "Inflammable compound" shall mean any substance, either fluid or solid, or any fluid that contains solid matter in suspension or otherwise, which will evaporate a gas that will flash at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 2. "Volatile inflammable liquid" shall mean any liquid which will evaporate a gas that will flash at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 3. "Unpierced fire walls, floor and ceiling" shall mean walls constructed either of brick, stone, cement concrete, hollow tile or cement blocks covered with cement mortar not less than three-quarters of an inch in thickness, or metal lath and cement plaster not less than one and one-half inches in thickness supported by angle iron frame; floor constructed of cement concrete not less than three inches in thickness; and ceiling constructed of metal lath and cement plaster not less than three-quarters of an inch in thickness. All to be without openings of any kind therein, except for piping or electrical conduits, which shall be sealed in the wall air-tight.

CHAPTER 2.

Licenses and Permits.

SECTION 4. No person shall manufacture, store or keep for sale any inflammable compound in a building, or keep or store any volatile inflammable liquid for use in connection therewith, unless a license and a permit have been obtained therefor in accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto: *provided, however:—*

(a) That any building, except a building used in whole or in part as a dwelling, may be used for the storage or keeping for sale of the said compound in quantity not exceeding six gallons, in the aggregate, without a license or a permit.

(b) That any building used in whole or in part as a dwelling may be used for the keeping or storage of the said compound for domestic use only, in quantities not exceeding one quart for each family residing therein, without a license or a permit.

(c) That any building used in whole or in part as a hotel having over fifteen sleeping-rooms may be used for the keeping or storage

of the said compound for domestic use only, in quantity not exceeding three gallons, without a license or a permit.

SECTION 5. Any store or shop located in a building which is used in part as a dwelling may be used for the storage or keeping for sale of the said compound in quantity not exceeding four gallons, in the aggregate, and in the unbroken trade containers provided for in these regulations, without a license or permit. A quantity not exceeding twelve gallons of the said compound may be so kept, if a license and a permit have been obtained therefor in accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto.

SECTION 6. No person shall store or keep for sale any inflammable compound within this Commonwealth for use as a stove polish or as an insecticide: *provided, however*, that this section shall not apply to foundry pastes containing naphtha, when sold in unbroken, properly marked and hermetically sealed metal packages of not less than five pounds each, nor the storage and use of such pastes on the premises of stove foundries only.

SECTION 7. Applications for permits to store and keep for sale inflammable compound, or to manufacture inflammable compound and to keep or store volatile inflammable liquid for use in connection therewith, shall be made in writing to the Chief of the District Police, or the official designated by him to grant such permits, upon forms to be furnished by the Chief of the District Police. A permit shall not be granted until a license has been obtained from the mayor and aldermen of a city or the selectmen of a town.

SECTION 8. No permits shall be granted for the manufacture, storage or sale of any inflammable compound that contains a volatile inflammable liquid in excess of eighty per cent. of the volume thereof.

SECTION 9. All licenses and permits provided for in these regulations must be conspicuously posted, under glass, upon the premises.

SECTION 10. The Chief of the District Police, or the official granting the permit, may revoke the same for cause, after due notice and hearing.

CHAPTER 3.

Location and Construction.

SECTION 11. No inflammable compound shall be manufactured in any building: —

(a) That is located within fifty feet of the nearest wall of any building occupied as a hotel exceeding two stories in height, school, hospital, theatre or place of public amusement or assembly.

(b) That is occupied in any part as a dwelling, tenement house or lodging house.

(c) That is more than three stories in height.

(d) That is of wooden construction throughout, except located not less than two hundred feet from the nearest building.

(e) That is artificially lighted by any means other than electricity.

(f) In any part of which drugs, cigars, cigarettes or tobacco are kept for sale.

(g) In any part of which dry goods, matches, resin, hemp, cotton, explosives, fireworks, firecrackers or other materials of a highly inflammable nature are stored or kept for sale.

SECTION 12. The mixing room of a building used in any part for the manufacture of inflammable compound shall be located in the top story of such building; shall have walls and ceiling covered with metal lath and cement plaster not less than one inch in thickness; a cement concrete floor not less than two inches in thickness; door sills raised at least three inches above the floor level; all doors to be standard fire doors, and all windows which expose other buildings within fifteen feet fitted with wireglass, metal sashes and frames. There shall be a skylight, glazed with common glass, in the roof of the building, opening into the mixing room.

SECTION 13. In the mixing room there shall be ventilating apertures in the outer walls leading direct to the outside air. Said apertures shall have a clear sectional area of not less than thirty-six square inches, shall be covered on the outside with 30-mesh brass wire screens, and shall be located not more than three inches from the floor level, and, if possible, placed on opposite sides of the room.

SECTION 14. Mixing tanks shall be provided with covers of iron, or wood covered with sheet iron, hinged and fitted with a flange to extend down at least two inches over all sides of the tanks when closed. The said covers shall be kept closed except when the ingredients entering into the manufacture of the inflammable compound are being placed therein.

SECTION 15. There shall be no connection between the mixing room and any public drain, sewer or cesspool.

CHAPTER 4.

Artificial Lighting and Heating.

SECTION 16. The artificial lighting shall be by means of the electric incandescent system, with keyless sockets, vapor-tight double globes surrounded with wire cages; and all electric switches and cut-outs shall be located on the outside of the room.

SECTION 17. The artificial heat shall be furnished by steam or hot water derived from a source outside of and entirely separate from any room in which volatile inflammable liquid or compound is manufactured or exposed to evaporation.

CHAPTER 5.

Operation and Maintenance.

SECTION 18. No electrical apparatus capable of emitting an exposed spark, and no stove, forge, boiler, torch, naked flame or fire shall be allowed in or about any room in which volatile inflammable liquid or compound is manufactured or exposed to evaporation.

SECTION 19. No smoking, nor any lighted cigar, cigarette or pipe, nor any matches or pocket lighters shall be allowed in or near any room in which volatile inflammable liquid or compound is manufactured or exposed to evaporation.

SECTION 20. Inflammable compound manufactories shall be furnished with a sufficient number of chemical fire extinguishers, and buckets, filled with sand and provided with hand scoops, for use in case of fire.

SECTION 21. Inflammable compound for sale shall be put up in metal cans not in excess of one gallon capacity, which shall be fitted with screw caps and shall be air-tight when closed.

SECTION 22. Each can containing an inflammable compound shall bear upon the label the trade name of the compound; the name of the volatile inflammable liquid employed therein; the name and address of the manufacturer; and in large letters conspicuously displayed thereon, the words:—

“THIS CAN CONTAINS .”¹

“CAUTION — INFLAMMABLE COMPOUND.”

“KEEP AWAY FROM FLAME OR FIRE.”

SECTION 23. Not more than twenty-five gallons of inflammable compound, in the aggregate, shall be kept for sale at retail in a building at any one time, and such inflammable compound shall be kept and sold in the original packages.

SECTION 24. Not more than five hundred gallons of inflammable compound, in the aggregate, shall be stored or kept for sale at wholesale in a building at any one time. The said compound shall be kept in its original cases, in a building used exclusively for that purpose and separated from other buildings by unpierced fire walls or in rooms used exclusively for that purpose in fireproof warehouses only: *provided, however*, that this section shall not apply to the storage of inflammable compound on the premises of separate manufactories located in isolated portions of cities and towns.

¹ Name of the volatile inflammable liquid to appear in this space, such as naphtha, gasoline, benzine or otherwise.

CHAPTER 6.

Storage and Handling of Volatile Inflammable Liquid.

SECTION 25. Not more than thirty gallons of volatile inflammable liquid shall be allowed at any one time in any building, any part of which is used for the manufacture of inflammable compound, and all of the said liquid shall be manufactured into commercial compounds as soon as possible after receipt thereof, placed in trade containers, and removed at once from the mixing room.

SECTION 26. Quantities of volatile inflammable liquid in excess of thirty gallons shall be stored in underground tanks, and when so stored shall be conveyed by means of a pump through a pipe running directly from such storage tank to the mixing tank.

SECTION 27. Where practicable, tanks for the storage of volatile inflammable liquid shall be installed outside of buildings underground, on a solid foundation entirely surrounded by earth, well tamped in place, the top of the tank to be not less than two feet below the surface of the ground.

SECTION 28. If impracticable to locate a storage tank outside of a building, it may be placed underground inside of a building not less than two feet below the level of the surface of the ground.

SECTION 29. A tank containing volatile inflammable liquid, if within ten feet of a building having a cellar or basement and not placed below the level of the floor of such cellar or basement, shall be embedded and entirely surrounded by not less than ten inches in thickness of Portland cement concrete.

SECTION 30. No tank in excess of two hundred and eighty gallons' capacity shall be installed underground inside of a building having a basement, or more than one story in height, unless such building is of fireproof construction.

SECTION 31. No tank in excess of five hundred and fifty gallons' capacity shall be installed underground on the premises of any inflammable compound manufactory unless a special permit has been granted therefor by the Chief of the District Police.

SECTION 32. Underground storage tanks of more than sixty gallons' capacity and less than two hundred and eighty gallons' capacity must be constructed of No. 12 gauge galvanized steel or three-sixteenths of an inch black steel.

SECTION 33. Tanks in excess of two hundred and eighty gallons' capacity shall be constructed of not less than three-sixteenths of an inch galvanized steel or one-quarter inch black steel.

SECTION 34. Tanks shall be riveted, welded or brazed, and shall be soldered or caulked to make them tight and strong.

SECTION 35. All tanks shall be thickly covered with asphaltum or some other rust-resisting material.

SECTION 36. No storage tank shall hereafter be placed under a sidewalk or in front of the building line of a street.

SECTION 37. Storage tanks shall be filled from a tank wagon in the daytime.

SECTION 38. Each storage tank must be provided with a filling pipe, a draught pipe leading direct to the mixing tank, a vent pipe and may have a gauge pipe, the opening to which, when the tank is located in a basement, shall be protected, preferably, by some safety self-closing device.

SECTION 39. All pipes shall lead from the top of tanks, and the top of all tanks shall be below the level of the lowest pipe used in connection therewith, except piping on the inside of tanks.

SECTION 40. All pipes connected with a tank for the storage of volatile inflammable liquid shall be of galvanized wrought iron or steel, and shall have malleable fittings, and all screw joints shall be made up with litharge and glycerin.

SECTION 41. All pipes used for the conveyance of volatile inflammable liquid must decline to tanks without traps or pockets and shall be protected against mechanical injury.

SECTION 42. Filler pipes must be made of galvanized iron not less than one and one-quarter inch in diameter, and extend to within two inches of the bottom of the tank.

SECTION 43. The outer end of the filler pipe must terminate in a screw or close fitting cap kept securely locked when not in use.

SECTION 44. Where tanks are located under the building, the filler pipe must run to the outside of such building.

SECTION 45. Where a filler pipe runs to a sidewalk, alley or public highway, it must terminate in a screw or close-fitting cap and be protected by a cast-iron filler box with iron cover, set flush with the surface of the sidewalk at the curb, alley or highway, to be kept locked when not in use.

SECTION 46. The vent pipe shall be of galvanized wrought iron not less than one inch in diameter, and shall run from the top of the tank to at least four feet above the roof of the building, except as otherwise provided in section 48.

SECTION 47. A vent pipe shall terminate not less than ten feet from all openings in higher adjacent buildings with a double goose-neck opening downward, the openings to be covered with a brass wire screen not coarser than 30-mesh.

SECTION 48. Where a tank is located not less than ten feet from any building, a combination filling and vent pipe so equipped as to vent the tank when necessary, may, in the discretion of the official granting the permit, be used.

SECTION 49. All draught pipes passing through a building from the basement to the mixing tank shall be enclosed in cement concrete

not less than four inches in thickness, and, when practicable, such pipes shall be placed next to the wall.

SECTION 50. Volatile inflammable liquid shall be drawn from the tank by means of a suction pump which shall have a shut-off valve with a ground key on the nozzle. In no case shall there be a return waste pipe to the tank.

SECTION 51. No volatile inflammable liquid shall be used for motive power for any stationary engine in an inflammable compound manufactory.

SECTION 52. The maximum quantities of inflammable compound and of volatile inflammable liquid allowed by the foregoing regulations may be reduced in the discretion of the official granting the permit.

CHAPTER 7.

Miscellaneous.

SECTION 53. These regulations shall take effect on the first day of May, 1914.

J. H. WHITNEY,

Chief of the District Police.

Regulations governing Dry-cleaning, Dry-dyeing and Sponging Establishments, taking Effect May 15, 1914.

In accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto, the Detective and Fire Inspection Department of the District Police hereby adopts and prescribes the following regulations governing dry-cleaning, dry-dyeing and sponging establishments and the storage and handling of volatile inflammable liquid in connection therewith.

CHAPTER 1.

Definitions.

SECTION 1. "Dry-cleaning" or "dry-dyeing" shall mean the act or process of washing or immersing in volatile inflammable liquid a garment, fabric, fibre, substance or article for the purpose of cleaning or dyeing the same.

SECTION 2. "Volatile inflammable liquid" shall mean any liquid which will evaporate a gas that will flash at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 3. "Unpierced fire walls, floor and ceiling" shall mean walls constructed either of brick, stone, cement concrete, hollow tile or cement blocks covered with cement mortar not less than three-

quarters of an inch in thickness, or metal lath and cement plaster not less than one and one-half inches in thickness supported by angle iron frame; floor constructed of cement concrete not less than three inches in thickness; and ceiling constructed of metal lath and cement plaster not less than three-quarters of an inch in thickness. All to be without openings of any kind therein except for piping or electrical conduits, which shall be sealed in the wall air-tight.

SECTION 4. "Sponging" shall mean the process of applying volatile inflammable liquid to a garment or other article for the purpose of removing spots or stains therefrom.

CHAPTER 2.

Licenses and Permits.

SECTION 5. No person shall conduct or maintain a dry-cleaning or dry-dyeing establishment, or keep or store any volatile inflammable liquid in connection therewith, unless a license and a permit have been obtained therefor in accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto.

SECTION 6. Applications for permits to conduct or maintain a dry-cleaning or dry-dyeing establishment, or to keep, store or use volatile inflammable liquid in connection therewith, shall be made in writing to the Chief of the District Police, or the official designated by him to grant such permits, upon forms to be furnished by the Chief of the District Police. A permit shall not be granted until a license has been obtained from the mayor and aldermen of a city or the selectmen of a town.

SECTION 7. Each application for a permit shall be accompanied by a plan of the premises.

SECTION 8. All licenses and permits provided for in these regulations must be conspicuously posted, under glass, upon the premises.

SECTION 9. The Chief of the District Police, or the official granting the permit, may revoke the same for cause, after due notice and hearing.

CHAPTER 3.

Location and Construction.

SECTION 10. No building shall be used for dry-cleaning or dry-dyeing which is situated within fifty feet of the nearest wall of any building occupied as a hotel exceeding two stories in height, hospital, school, theatre or other place of public amusement or assembly: *provided, however*, that the provisions of this section shall not apply to buildings in use for dry-cleaning or dry-dyeing establishments previous to the date of these regulations, except in cases where, in the opinion of the Chief of the District Police, the conditions are hazardous.

SECTION 11. The process of washing or immersing shall be conducted in a building not exceeding one story in height, not less than twenty feet from any other building, nor in excess of two thousand square feet of covering surface; and such building shall be constructed as follows:—

(a) The walls shall be of brick, cement or stone, and the floor of cement concrete, the surface of which shall decline toward the center.

(b) The roof may be of wooden construction, but shall be externally covered with non-combustible material, and the ceiling shall be of metal lath and cement plaster.

(c) The windows shall be of wireglass with metal sashes and frames, and so arranged that they may be opened from the inside and the outside.

(d) There shall be at least two independent exits, as far apart as may be, fitted with standard automatic-closing fire doors, opening outward, and without latches.

(e) Ventilating apertures leading to the open air shall be constructed in the side walls at the floor level, said apertures to be not more than eight feet apart, with a clear sectional area of not less than thirty-six square inches, and shall be covered on the outside with 30-mesh brass wire screen.

SECTION 12. Buildings used for dry-cleaning or dry-dyeing shall be without basements or cellars, shall be used exclusively for that purpose, and shall be located not less than ten feet from any public way.

SECTION 13. All drying and deodorizing shall be conducted in a room separated from the washing and extracting room by an unpierced fire wall, with entrance from the outside only; and the said room shall be fitted with adequate means of ventilation. Machines known as “dry tumblers” may be installed in the drying and deodorizing rooms, provided such machines shall tightly enclose the cleansed articles, and shall be fitted with a draught fan to rapidly expel all vapors to the outside air.

SECTION 14. Steam used in connection with a dry-cleaning or dry-dyeing establishment shall be generated at a point not less than thirty feet therefrom, and shall be of sufficient pressure to furnish, at all times, live steam in volume necessary to extinguish fires within the building.

SECTION 15. The washing and drying buildings shall be provided with not less than two live steam inlets, consisting of one and one-half inch pipes leading from the boiler direct, and operated by valves located outside of the building, not more than four feet from the ground, for the purpose of extinguishing fires therein; such pipes shall enter the room at opposite sides or ends, one at the floor level and the other near the ceiling.

SECTION 16. All steam or hot water pipes shall be properly screened to prevent contact with inflammable goods.

SECTION 17. No engine, motor, water heater, nor other device requiring fire for its operation, nor any device, apparatus or wiring that is liable to emit a spark, shall be used or maintained, except as otherwise provided by these regulations.

SECTION 18. In all washing rooms there shall be a draught fan of sufficient capacity to insure the rapid expulsion of all waste vapors consequent upon the washing, extracting and exposed handling of fabrics. The draught fan shall revolve continuously while the establishment is in operation, and shall be attached to a sheet-iron draught pipe of graduated diameters, with openings near the floor at each washer or extractor.

SECTION 19. All extractors shall be provided with metal covers which shall be kept closed while the machines are in operation.

SECTION 20. The covers and exhaust valves of all machines containing any highly inflammable liquid shall be so arranged that the covers may be closed and the valves opened from the outside of the building in case of fire.

SECTION 21. All racks or other appurtenances in drying rooms shall be non-combustible.

SECTION 22. All metal piping and metal parts of machines shall be properly grounded with No. 10 copper wire.

CHAPTER 4.

Artificial Lighting and Heating.

SECTION 23. The artificial lighting shall be by means of the electric incandescent system, with keyless sockets, vapor-tight double globes surrounded with wire cages; and all electric switches and cut-outs shall be located on the outside of the room.

SECTION 24. The artificial heat shall be furnished by steam or hot water derived from a source outside of and entirely separate from the washing and drying buildings.

CHAPTER 5.

Operation and Maintenance.

SECTION 25. In the process of washing or immersing extreme care must be used in the handling of silken or other goods of a nature liable to generate frictional electricity.

SECTION 26. Cleansed articles must be thoroughly dried and deodorized, and shall not be removed to other buildings until all danger from residual vapor has been removed.

SECTION 27. Smoking, or the carrying of matches or pocket lighters, is prohibited within the buildings.

SECTION 28. There shall be four fire buckets, filled with sand and provided with hand scoops, to be used for fire-extinguishing purposes only; and a quantity of sand shall also be kept on the floor for absorbing waste oils.

SECTION 29. There shall be one chemical fire extinguisher for inflammable liquids for each five hundred square feet of floor space or fraction thereof.

CHAPTER 6.

Storage and Handling of Volatile Inflammable Liquid.

SECTION 30. Volatile inflammable liquid used in connection with dry-cleaning or dry-dyeing shall be stored in tanks placed underground, the tops of such tanks to be not less than two feet below the surface of the ground, and constructed as follows:—

(a) Tanks in excess of sixty gallons' capacity and less than two hundred and eighty gallons' capacity must be constructed of galvanized steel not thinner than No. 12 gauge.

(b) Tanks in excess of two hundred and eighty gallons' capacity must be made of galvanized steel not less than three-sixteenths of an inch in thickness.

(c) Tanks shall be riveted, welded or brazed, and shall be soldered or caulked to make them tight and strong.

(d) Tanks shall be thickly covered with asphaltum or some other rust-resisting material.

SECTION 31. Each tank shall be provided with a filling pipe, vent pipe and a draught pipe, which shall be arranged as follows:—

(a) The filling pipe shall be not less than one and one-quarter inch in diameter and shall be laid at a descending grade.

(b) The intake of the filling pipe shall be enclosed in a heavy metal box having a metal cover.

(c) The end of the filling pipe shall be closed with a threaded or tight-fitting cap, and the metal cover or cap kept securely locked when not in use.

(d) The filling pipe shall be fitted with a 30-mesh brass wire thimble screen, placed just below the threaded cap.

(e) The vent pipe shall be not less than one inch in diameter, and shall extend at least four feet above the roof of the building; it shall be fitted with a 30-mesh brass wire screen placed in the pipe at the connection with the tank.

(f) The vent pipe shall be capped with a double gooseneck opening downward, the openings to be covered with brass wire screen not coarser than 30-mesh.

SECTION 32. All pipes shall lead from the top of tanks, and the top of all tanks shall be below the level of the lowest pipe used in connection therewith, except piping on the inside of the tank.

SECTION 33. All pipes used for the conveyance of volatile inflammable liquid must decline to tanks without traps or pockets, and shall be protected against mechanical injury.

SECTION 34. All pipes shall be of galvanized wrought iron, and shall have malleable iron fittings, and all screw joints shall be made up with litharge and glycerin.

SECTION 35. All volatile inflammable liquid remaining in the washing room at the close of each day's business shall be transferred through continuous piping to a settling tank, and each settling tank shall be installed and equipped in the same manner as prescribed in these regulations for a storage tank.

SECTION 36. No volatile inflammable liquid shall be discharged into any public drain or sewer.

SECTION 37. No volatile inflammable liquid used in the process of dry-cleaning or dry-dyeing shall be allowed to settle in open pans or vessels.

CHAPTER 7.

Sponging.

SECTION 38. The process of sponging for hire shall not be conducted in a building occupied in whole or in part as a dwelling house, apartment house, boarding house, lodging house, tenement house, dormitory, hotel, family hotel, school, hospital, theatre or other place of public amusement or assembly.

SECTION 39. The application of volatile inflammable liquid to a garment or other article, in the process of sponging, shall be from a self-closing safety can, not exceeding one quart in capacity.

SECTION 40. Not more than one gallon of volatile inflammable liquid for use in the process of sponging for hire shall be kept in any building at any one time, and such liquid shall be kept in a self-closing safety can and used for sponging only.

SECTION 41. Sponging operations shall not be conducted within ten feet of a fire or open flame.

SECTION 42. A license or a permit shall not be required for the process of sponging for hire and the keeping of volatile inflammable liquid for that purpose as herein provided.

CHAPTER 8.

Miscellaneous.

SECTION 43. These regulations shall take effect on the fifteenth day of May, 1914.

J. H. WHITNEY,
Chief of the District Police.

Regulations governing the Keeping, Storage and Use of Celluloid, and of Volatile Inflammable Liquid and Compound in Connection therewith in the Manufacture of Shoe Heels and Box Toes, and Parts thereof, taking Effect June 1, 1914.

In accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto, the Detective and Fire Inspection Department of the District Police hereby adopts and prescribes the following regulations governing the keeping, storage and use of celluloid and of volatile inflammable liquid and compound used in connection therewith in the manufacture of shoe heels and box toes, and parts thereof.

CHAPTER 1.

Definitions.

SECTION 1. "Celluloid" shall mean any material or compound having pyroxylin as a base, including pyralin, fiberloid, viscoloid, and similar products by whatever name known, when in the form of sheets, blocks, slabs or other shapes.

SECTION 2. "Volatile inflammable liquid" shall mean any liquid which will evaporate a gas that will flash at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 3. "Inflammable compound" shall mean any substance, either fluid or solid, or any fluid that contains solid matter in suspension or otherwise, which will evaporate a gas that will flash at a temperature of less than one hundred degrees Fahrenheit, to be ascertained by the application of either Tagliabue's, Abel-Pensky's or Pensky-Martens' closed cup instrument.

SECTION 4. "Unpierced fire walls, floor and ceiling" shall mean walls constructed either of brick, stone, cement concrete, hollow tile or cement blocks covered with cement mortar not less than three-quarters of an inch in thickness, or metal lath and cement plaster not less than one and one-half inches in thickness supported by angle iron frame; floor constructed of cement concrete not less than three inches in thickness; and ceiling constructed of metal lath and cement plaster not less than three-quarters of an inch in thickness. All to be without openings of any kind therein except for piping or electrical conduits, which shall be sealed in the wall air-tight.

CHAPTER 2.

Licenses and Permits.

SECTION 5. All celluloid, and volatile inflammable liquid and compound used as raw material in a manufactory, in excess of one day's supply, shall be stored in a non-combustible building located not less than fifty feet distant from any other building; such building shall not exceed one story in height and shall be used for that purpose exclusively: *provided, however*, that the celluloid and the volatile inflammable liquid and compound so stored shall be separated by a non-combustible partition; and *further provided* that the amount of celluloid so stored shall not exceed three hundred pounds, in the aggregate, and the amount of volatile inflammable liquid and compound so stored shall not exceed one hundred and ten gallons, in the aggregate, unless a license and a permit have been obtained therefor, in accordance with the provisions of chapter 370, Acts of 1904, and amendments thereto.

SECTION 6. Applications for permits in accordance with the provisions of section 5 shall be made in writing to the Chief of the District Police, or to the official designated by him to grant such permits, upon forms to be furnished by the Chief of the District Police. A permit shall not be granted until a license has been obtained from the mayor and aldermen of a city or the selectmen of a town.

SECTION 7. Each application for a permit shall be accompanied by a plan of the premises.

SECTION 8. All licenses and permits provided for in these regulations must be conspicuously posted, under glass, upon the premises.

SECTION 9. The Chief of the District Police, or the official granting the permit, may revoke the same for cause, after due notice and hearing.

CHAPTER 3.

Location and Construction.

SECTION 10. No building shall be used for the keeping, storage or use of celluloid or of volatile inflammable liquid or compound in connection therewith in the manufacture of shoe heels and box toes, or parts thereof:—

(a) That is occupied in any part as a dwelling, tenement or lodging house, hotel, hospital, school, or as a place of public amusement or assembly.

(b) That is not equipped with an adequate wet-sprinkler system: *provided, however*, that such system shall not be required in the outside storage building provided for by section 5.

SECTION 11. No building shall be used for the keeping, storage

or use of celluloid or of volatile inflammable liquid or compound in connection therewith in the manufacture of shoe heels or parts thereof, that is more than three stories in height, unless authorized by a special permit granted by the Chief of the District Police.

SECTION 12. All rooms shall be adequately ventilated, and all rooms in which celluloid and volatile inflammable liquid and compound are used in the manufacture of shoe heels or parts thereof shall be ventilated at the floor level and at the ceiling. The ceiling ventilation shall be through the roof by a vent pipe with a sectional area of not less than fifty square inches. The vent pipe shall be constructed of No. 18 U. S. gauge galvanized sheet steel, shall extend area of not less than fifty square inches. The vent pipe shall be covered on the outside with one-quarter inch mesh brass wire screen, and shall be protected from the weather in a manner approved by the official hereinbefore designated by the Chief of the District Police to grant permits.

SECTION 13. The room in which the process of cutting sheet stock of celluloid is conducted shall be located on the top floor of the building; shall be used for that purpose exclusively; shall have the ceiling and walls covered with metal lath and cement plaster not less than three-quarters of an inch in thickness; and shall be ventilated through the ceiling in the manner provided for in section 12. Such room shall have at least two independent exits, as far apart as may be, fitted with standard automatic-closing fire doors, opening outward and without latches.

SECTION 14. All rooms in which the forms cut from celluloid sheets and the volatile inflammable liquid and compound are used in the manufacture of shoe heels or parts thereof shall be located on the top floor of the building; shall be occupied for that purpose exclusively; shall be made fire-resisting by covering the ceilings and walls with metal lath and cement plaster; and shall have at least two independent exits, as far apart as may be, fitted with standard automatic-closing fire doors, opening outward and without latches.

CHAPTER 4.

Operation and Maintenance.

SECTION 15. All celluloid used as raw material that is not in the process of manufacture shall be kept in closed, non-combustible receptacles.

SECTION 16. All celluloid used at the benches of the operatives shall be kept in metal receptacles, which shall be kept closely covered except when necessary to obtain access to the contents.

SECTION 17. The volatile inflammable liquid and compound at the benches of the operatives shall be kept in metal receptacles, which shall be kept closely covered except when necessary to obtain access to the contents.

SECTION 18. The covers or doors of ovens or receptacles containing the volatile inflammable liquid and compound used for softening the celluloid covering of shoe heels or parts thereof shall be self-closing, to prevent the escape of vapor.

SECTION 19. The floors shall at all times be kept clear of all scraps of celluloid and waste material, which shall be placed in metal waste cans with hinged and self-closing covers, and shall be removed daily from the building.

SECTION 20. All celluloid scrap shall be stored in the storage building referred to in section 5, or shall be burned in the open air at a safe distance from a building.

SECTION 21. No smoking, nor any lighted cigar, cigarette or pipe, shall be allowed in or near any room in which celluloid, volatile inflammable liquid or compound are kept, stored, used or exposed to evaporation.

SECTION 22. A sufficient number of chemical fire extinguishers, and buckets filled with sand and provided with hand scoops, shall be furnished for use in case of fire.

SECTION 23. No fire, fire heat, naked flame nor electrical apparatus capable of emitting an exposed spark shall be allowed in a room where celluloid or volatile inflammable liquid or compound used in connection therewith are kept, stored or used.

CHAPTER 5.

Artificial Lighting and Heating.

SECTION 24. The artificial lighting shall be by means of the electric incandescent system; and in the celluloid-cutting room and the heel manufacturing room, where celluloid and volatile inflammable liquid and compound are used, the said system shall have keyless sockets, vapor-tight double globes surrounded with wire cages, and all electric switches and cut-outs shall be located on the outside of the room.

SECTION 25. The artificial heat shall be furnished by steam or hot water. The heating plant, if located on the same story or the story below the manufacturing rooms mentioned in sections 13 and 14, shall be installed in a room separated therefrom by unpiereed fire walls, floor and ceiling, with an entrance from the outside only.

CHAPTER 6.

Miscellaneous.

SECTION 26. These regulations shall take effect on the first day of June, 1914.

J. H. WHITNEY,
Chief of the District Police.

REGULATIONS RELATING TO THE ERECTION, ALTERATION AND INSPECTION OF CERTAIN BUILDINGS.

In accordance with the provisions of section 54, chapter 655, Acts of 1913, the following regulations have been issued by me, as Chief of the District Police Force, for the uniform enforcement of such statute, taking effect Nov. 1, 1913:—

Regulations relating to the Erection, Alteration and Inspection of Schoolhouses.

These regulations, unless otherwise specified, relate to graded or high school buildings of medium size, and the following mentioned buildings shall conform thereto so far as applicable.

SCHOOLHOUSE.—Any building, or part of a building, used as a public or private school, academy, seminary or college, containing one or more rooms, where a regular course of instruction is afforded to more than ten pupils at one time.

BASEMENTS.—Shall be well lighted and may contain the gymnasium, and the domestic science, manual training, lunch, recreation, sanitary, storage, work, boiler and fuel rooms, and wardrobes. The floors, including those of the fresh air and heating chambers, if so directed, shall be of concrete with an approved covering of sheet asphalt or Portland cement, except as hereinafter specified. Suitable floor drains with traps shall be provided where circumstances require. The gymnasium, and the domestic science and manual training rooms, if so directed, shall have approved wood floors. The ceilings, unless the first floor of the building is of fireproof or mill construction, shall be of metal lath and hard plaster. In buildings hereafter erected the basements shall be not less than 10' 0" in height.

CORRIDORS.—Shall be well lighted, and in each case, if so directed, shall terminate on an egress. In buildings hereafter erected, the corridors shall be not less than 10' 0" in width, in the clear, for buildings with eight class rooms, and shall increase at least 1' 0" in width for every two additional class rooms, and may decrease 1' 0" in width for every two class rooms less than that number; and shall be free from sharp turns, where circumstances will permit.

CLASS AND RECITATION ROOMS.—Shall be lighted from outside by windows, and in buildings hereafter erected, and in existing buildings if so directed, such windows shall have not less than one square foot of glass to each five square feet of floor area, and the top of the windows shall be not more than 8" below the ceiling. For rooms lighted from one side only their width from that side shall be not

more than two and one-third times their height. The ceilings shall be free from girders, beams or other obstruction to the free circulation of air.

ASSEMBLY HALL. — When not above the second story of the building, may have a stage or recessed platform, on which such fire-proofed scenery and other stage appliances as the inspector shall approve may be used, and with such proscenium protection as the inspector shall, in each case, direct. If the assembly hall is above the second story of the building, it may be used for such entertainments not requiring the use of scenery and other stage appliances as the inspector may approve, and for public gatherings: *provided, however*, that an assembly hall in the third story of a building of exceptional construction and egresses, having a stage with approved fire-resisting proscenium wall or partition and an asbestos proscenium curtain operated by approved mechanism, with an approved automatic ventilator over the stage equal in area to one-tenth that of the stage floor, and with such permanent fireproof scenery and other stage appliances as the inspector shall approve and set forth in detail on the certificate issued for such hall, may be used.

AISSLES AND SEATING. — Seats for assembly halls and lecture rooms shall be not less than 2' 6" from back to back, measured horizontally, and no seat shall have more than seven seats between it and an aisle. The aisles shall be of such width as the inspector shall direct. For an assembly hall having portable seats, floor cleats or other approved device for securing the seats in place shall be used. For an approximate estimate of seating capacity for an assembly hall, six square feet of floor space shall equal one seat. The aisles in class and recitation rooms, unless otherwise directed, shall be not less than the following in width: —

In primary schools, wall aisles 2' 4", center aisles 1' 5".

In grammar schools, wall aisles 2' 8", center aisles 1' 7".

In high schools, wall aisles 3' 0", center aisles 1' 9".

EGRESSES — Free and unobstructed ways by doors, corridors and stairways to places of safety, and in these regulations also given as exits. Buildings hereafter erected shall have at least two independent egresses, as far apart as may be, aggregating at least 2' 0" in width for every one hundred persons that the building will accommodate, including the assembly hall and gallery if such are to be used for other than school purposes during the time when school is in session, and no such egress shall be less than 3' 6" in width, except in one and two room buildings where such egress shall be not less than 3' 0" in width. Assembly halls, gymnasiums, galleries and basements shall have at least two independent egresses as far apart as may be. One half of the gymnasium and basement egresses, if so directed, shall be direct to the outside; and where areas and steps

are necessary they shall have approved hand-rails. Class, recitation, domestic science and manual training rooms and laboratories, if so directed, shall have at least two ways of egress, one of which may be through an adjoining room. A landing at least 6" wider than the door, when open, must be between any exterior egress door and a step downward in front of the door. Each egress from the assembly hall, gymnasium, galleries, and elsewhere if so directed, shall be provided with a sign having on it the word "EXIT" in letters at least 5" in height, and so as plainly to indicate to persons within the building, at all times, the location of such exits.

STAIRWAYS. — Shall have hand-rails on both sides; the wall-rails shall have an approved number of heavy wrought or bronze brackets, and the upper ends shall have circular returns secured with rail bolts or wall plates. In buildings hereafter erected, the stairways from the basement to the first story, and elsewhere if so directed, shall be enclosed with fireproof walls with fireproofed self-closing doors, or wire glass not less than $\frac{1}{4}$ " thick, set in metal frames or metal covered doors, may be used in place thereof. The steps of stairs shall have a rise not less than 6" nor more than 7" and a run not less than 10", and there shall be not more than fifteen nor less than three risers between landings; when returning on wells or directly upon themselves, the landings shall be the full width of both flights and no winding steps shall be used, and no closets shall be placed under any stairs. In buildings hereafter erected, and in existing buildings if the inspector so directs, when the assembly hall is above the second story, there shall be one or more stairways from the assembly hall equal to 1' 0" in width for every one hundred persons which the assembly hall is capable of seating, but no such stairway shall be less than 4' 0" in width; the stairways shall be enclosed in fireproof or fire-resisting walls, and shall run directly to and connect with the ground, and shall have no connection with any other part of the building. Measurements for width of stairs shall be taken between hand-rails. Balustrades shall be not less than 3' 0" in height on landings or 2' 8" on runs plumb over risers.

EGRESS DOORS. — Shall open outwardly, and where necessary to fasten, the standing leaf of each pair of doors shall have surface bolts, both top and bottom, connected with a center T-turn, lever or push bar, and no other bolts or hooks shall be used; single doors shall have night latches, operated by a full size T-turn, knob, lever or push bar, and no bolts, hooks or dead locks shall be used; all the above to be operated from the inside of the doors and within 4' 0" in height from the floor. Doors connecting class or other rooms shall have double-acting hinges but no bolts, hooks or locks; and exterior, vestibule and corridor doors, if so directed, shall have plate glass upper panels, not less than $\frac{1}{4}$ " in thickness. No rolling, sliding or revolving doors shall be installed as egress doors.

GRADIENTS. — Shall be used instead of steps to overcome differences in levels of not more than 1' 6", and no such gradient shall exceed 1" in 10". Sills of connecting doors shall be so designed as to be level and flush with the adjoining floors.

BOILER, FUEL, STORAGE AND WORK ROOMS. — In buildings hereafter erected, and in existing buildings if so directed, no boiler, fuel, storage or work rooms shall be placed under a corridor, stairway or egress, and wherever located, if so directed, they shall be enclosed in masonry or fireproof walls with fireproof ceilings, and all openings in the walls to the basement shall be provided with self-closing fireproof or automatic fire doors. The floors of boiler and fuel rooms, if so directed, shall be of hard burned brick set on edge in cement.

HEATING AND VENTILATION. — For a mechanical system with the temperature of the outside air at zero, or for a gravity system with the rooms at seventy degrees Fahrenheit and with the temperature of the outside air not less than forty degrees F. below that of the air entering the rooms through the inlets necessary to maintain seventy degrees F. in the rooms, the apparatus shall insure the removal near the floor levels, through ventiducts by the aid of heat or its equivalent, with approved regulating dampers, of not less than thirty cubic feet of air per minute for each person accommodated in the class, recitation, domestic science and manual training rooms and laboratories, and of not less than two and one-half cubic feet of air per minute for each foot in area of the assembly hall and gymnasium floors. Such apparatus shall also have means to supply, through properly located inlets, pure air equal to the amount removed, and at such height from the floors as to insure proper circulation, with means for the proper heating of such air when necessary, and with approved regulating, protecting and mixing dampers or other approved methods for regulating the temperature, so that no uncomfortable draughts will be felt and that the difference in temperature between any two points on the breathing plane, not less than 2' 0" from an outside wall, will not exceed three degrees F.; and it shall have sufficient means for heating as to maintain a temperature throughout such rooms of seventy degrees F. in zero weather. The velocity of the air entering the ventiducts in the class, recitation, domestic science and manual training rooms and laboratories shall not exceed four hundred feet, in the assembly hall and gymnasium shall not exceed five hundred feet, and through the grilles of the inlets shall not exceed three hundred and fifty feet, per minute. The offices, teachers' and emergency rooms, corridors and wardrobes shall have approved ventilation, and shall be provided with sufficient heat for their respective uses. The first-story corridors shall have an approved number and class of foot-warmers, where applicable. Direct radiation may be installed in the class,

recitation, domestic science and manual training rooms and laboratories, assembly hall and gymnasium only in such amounts as to heat the rooms to a temperature of sixty degrees F., and in recreation, sanitary and toilet rooms to at least seventy degrees F., in zero weather. Provisions may be made for reversing any of the above circulation for use when heat is not required, or for an indirect heating system having a plenum or supply chamber below the floor, delivering an approved amount of air to the rooms through perforated chair or desk standards, or their equivalent, and exhausting the same through grilles in the center and near each corner of the ceiling, with approved means for regulating the circulation of the air and temperature of the rooms. A hood of such size as to carry off all odors, fumes and gases, shall be placed over each stove in the domestic science room and over each demonstration table and compartment in the chemical laboratory and chemical laboratory lecture room. These hoods shall be connected by approved size ducts with ventiducts independent of those for the room ventilation, or, if the combined area of the hood ducts in a room is sufficient, and so arranged, no other exhaust from the room will be required. All fresh air rooms, heating chambers and heating and ventilating ducts or flues shall be of masonry, or metal of suitable gauge, thoroughly stayed and secured in place. All wall-inlet grilles shall be not less than 1' 0" more in height than the depth of the flue. Steam, hot water, electricity, furnaces or jacketed stoves may be used for heating. Provision shall be made, if so directed, for the installation of a primary heating and air washing apparatus.

SANITATION. — Where suitable water supply and sewerage are available, the sanitary rooms may be located in the basement or in any story of the building, and in buildings hereafter erected, and in existing buildings, if so directed, they shall be suitably lighted from outside; the sanitary rooms and gymnasium toilets shall have floors and base of non-absorbent material; the base shall be not less than 6" in height, with sanitary cove at the floor level, and suitable hose connections and floor drains with traps shall be provided. The boiler room shall have a suitable sink, and each sanitary or recreation room and each corridor shall have sinks of an approved size or an approved number of lavatories, and the recreation rooms and corridors shall have an approved number of drinking fountains. The sanitary rooms shall have the following fixtures for a mixed or co-educational building, based upon the assumption of there being an equal number of pupils of each sex. For buildings having a greater number, or majority fraction of a hundred pupils, or occupied by either sex exclusively, the same ratio respectively shall be observed. Such fixtures shall be flushed automatically from special tanks, and the slab urinals through suitable size brass pipes per-

PUPILS.	WATER CLOSETS.		Urinals.	SLABS.	
	Girls.	Boys.		Feet.	Inches.
50,	3	2	2	2	8
100,	4	3	4	5	4
200,	6	4	6	8	0
300,	9	6	8	10	8
400,	12	8	10	13	4
500,	14	9	12	16	0
600,	16	10	14	18	8
700,	18	11	16	21	4
800,	20	12	18	24	0
900,	22	13	20	26	8
1,000,	24	14	22	29	4

forated every 3" with blow-offs at the ends for cleaning. Local vents for each water closet and for each 1' 4" in length of slab urinals shall be not less than eleven square inches, and shall be connected with a duct of combined area, having a rise of 1" to each 1' 0" run to a ventiduct provided with mechanical or other approved means for maintaining proper circulation. Range water closets and separate urinals shall have an approved equivalent of the above flushing and local vents. The toilets connected with the offices, teachers' and emergency rooms shall have a water closet with local vent as above, with usual tank flush and an approved lavatory. Where suitable water supply and sewerage are not available, approved earth closets or privies and urinal trough shall be placed upon the school grounds not less than 30' 0" from the building. Except as otherwise specified or directed, the installation of the above fixtures, together with the required fixtures in the laboratories, gymnasium toilets and kitchen, shall be in accordance with plumbing ordinances or rules of the city or town in which the building is located, if such exist; otherwise in accordance with the plumbing rules formulated by the State Examiners of Plumbers.

FIRE ALARM.—A building having a basement, or more than one story in height, shall have such gong or gongs and such switches or other mechanism for operating the same as the inspector shall direct and locate; and where there is more than one gong, the system shall be so arranged that each gong shall be operated simultaneously from each of the operating stations; such operating stations shall be distinctly marked "Fire Alarm," and the system shall not be used for any other purpose.

FIRE PROTECTION.—The basement and each story of a building

shall have such means for extinguishing fire, consisting of stand pipe and hose or approved fire extinguishers, or both, as the inspector shall direct and locate, and such appliances shall be kept at all times in good condition and ready for use. Where stand pipes and hose are installed, approved hose racks and test cocks shall be provided. There shall be no inflammable decorations or draperies used in the building.

LIGHTING.—The corridors, stairways and egresses shall be suitably lighted, and the assembly hall, gymnasium and each gallery shall have a suitable number of emergency lights, to be controlled near the main entrance of the assembly hall and gymnasium, and, if electric lights are used, the above lighting, together with the illumination of the exit signs, shall be supplied from a source separate from that of the general service, if circumstances will permit; or, where gas is available, it shall be used as an auxiliary to the general service, or for the full lighting. All lights used on the stage or platform, when scenery or other stage appliances are used, shall be suitably guarded. The installation of electrical apparatus for furnishing light, heat or power, and all wiring and work connected therewith shall be in accordance with the rules of the National Board of Fire Underwriters; and, in buildings hereafter erected, or where alterations are being made, if so directed, they shall be in accordance with their rules, known as “National Electrical Code” as used in a theatre. Where the general and other lighting is by lamps, they shall be of metal, secured in place, and where necessary to use as emergency lights or for illuminating exit signs, they shall be provided with suitable shades, so as to burn continuously.

FIRE STOPS.—In buildings hereafter erected, fire stops shall be provided, as directed, in floors, walls and stairways, and if partitions around stairs are not of brick, or its equivalent, they shall be filled in solid between the studs and plastered with cement plaster upon metal lath; and such further means throughout the building, as may be necessary to prevent the spread of fire or its communication from any steam boiler or heating apparatus therein, shall be provided.

BOILERS AND MACHINERY.—Steam boilers and their installation and fittings shall be in accordance with the rules formulated by the Board of Boiler Rules. Engines, motors, pumps, blowers or fans, and all other heavy or high speed machinery shall have approved foundations of masonry, or rest on steel beams of approved size, supported by masonry; all to be guarded as the inspector shall direct.

FIRE ESCAPES.—In existing buildings where a fire escape may be considered as equivalent to a required exit, it shall be of such width and construction as the inspector shall direct, and the upper balcony

of the fire escape shall connect with the floor from which it leads by doors level with such floor and balcony, and the stairs shall extend to the ground.

ROOF OR OPEN AIR SCHOOL ROOMS. — Construction, egresses and equipment shall, in each case, be as directed.

PLANS AND SPECIFICATIONS. — For a building designed to be used, in whole or in part, or for a building in which alteration shall be made for the purpose of using it or continuing its use, in whole or in part, as a schoolhouse, shall be deposited with the Supervisor of Plans, Building Inspection Department of the District Police, State House, Boston, in accordance with section 15, chapter 655, Acts of 1913. Such plans shall show the designated number of each class and recitation room, the designated name of other rooms, and the number of pupils that each class and recitation room is to accommodate; and where steam or hot water is to be used for heating, they shall show the location, amount and class of radiation and the size of feed and return pipes.

J. H. WHITNEY,
Chief of the District Police.

Regulations relating to the Erection, Alteration and Inspection of Churches.

CHURCH. — A building or part of a building used for religious services or instruction and which may be used for such social or other purposes as the inspector shall approve. The basement or ground story may contain the chapel, vestry or assembly room, parlors, social rooms, kitchen, sanitariums, storage, boiler and fuel rooms. The chapel, society or parish house may be a part of the main building or connected therewith, and may contain the assembly room, parlors, social or other rooms.

EGRESSES. — Free and unobstructed ways by doors, corridors, vestibules and stairways to places of safety, and in these regulations also given as exits. In buildings hereafter erected, and in existing buildings if so directed, the auditorium, chapel, vestry or assembly room, and each gallery shall have at least two independent egresses, as far apart as may be, aggregating at least 2' 0" in width for every one hundred persons that the auditorium, chapel, vestry or assembly room, and each gallery will accommodate, one-half of which shall be direct, or by vestibules, corridors or stairways to the outside. No such egress shall be less than 3' 6" in width, except from galleries accommodating not more than one hundred and fifty persons where such egress shall be not less than 3' 0" in width. Where areas and steps are necessary they shall have approved hand-rails. Parlors, social and other rooms, if so directed, shall have at least two ways

of egress, one of which may be through an adjoining room. The combined egress of the entire building shall be not less than 1' 8" in width for every one hundred persons that the building will accommodate. A landing at least 6" wider than the door, when open, must be between any exterior egress door and a step downward in front of the door. Each egress from the auditorium, chapel, vestry or assembly room, galleries and elsewhere, if so directed, shall be provided with a sign having on it the word "EXIT" in letters not less than 5" in height, and so as plainly to indicate to persons within the building, at all times, the location of such exits.

STAIRWAYS. — Shall have hand-rails on both sides; the wall-rails shall have an approved number of heavy wrought or bronze brackets, and the upper ends shall have circular returns secured with rail bolts or wall plates. In buildings hereafter erected, the stairways from the basement to the first story, where directed, shall be enclosed with fireproof walls provided with fireproofed self-closing doors; or wire glass not less than $\frac{1}{4}$ " thick, set in metal frames or metal covered doors, may be used in place thereof. The steps of stairs shall have a rise not less than 6" nor more than $7\frac{1}{2}$ " and a run not less than $10\frac{1}{2}$ " nor more than 12", and there shall be not more than fifteen nor less than three risers between landings; they shall have solid treads and be capable of sustaining a live load of fifty pounds per 1' 0" in width of stairs with a factor of safety of four; when returning on wells or directly upon themselves, the landings shall be the full width of both flights. No winding steps shall be used, and no closets shall be placed under any stairs. Measurements for width of stairs shall be taken between hand-rails. Balustrades shall be not less than 3' 0" in height on landings or 2' 8" on runs plumb over risers.

EGRESS DOORS. — Shall open outwardly, and, where necessary to fasten, the standing leaf of each pair of doors shall have surface bolts, both top and bottom, connected with a center T-turn, lever or push bar, and no other bolts or hooks shall be used; single doors shall have night latches, operated by a full-size T-turn, knob, lever or push bar, and no bolts, hooks or dead locks shall be used; all the above to be operated from the inside of the doors and within 4' 0" in height from the floor. Egress doors connecting rooms, if so directed, shall have double-acting hinges, but no bolts, hooks or locks. No rolling, sliding or revolving doors shall be installed as egress doors.

GRADIENTS. — Shall be used instead of steps to overcome differences in levels of auditorium aisles, and elsewhere of not more than 1' 6", and no such gradient shall exceed 2" in 10" in auditorium aisles, and 1" in 10" elsewhere, and sills of connecting doors shall be so designed as to be level and flush with the adjoining floors.

ASSEMBLY ROOMS. — Where not above the second story of the building, may have a stage or recessed platform, on which such fireproofed scenery and other stage appliances as the inspector shall approve may be used, and with such proscenium protection as the inspector shall, in each case, direct. If an assembly room is above the second story of the building it may be used for such entertainments, not requiring the use of scenery and other stage appliances, as the inspector may approve, and for public gatherings: *provided, however,* that in an assembly room in the third story of a building of exceptional construction and egresses, having a stage with approved fire-resisting proscenium wall or partition, and an asbestos proscenium curtain operated by approved mechanism, with an approved automatic ventilator over the stage equal in area to one-tenth that of the stage floor, such permanent fireproof scenery and other stage appliances as the inspector shall approve and set forth in detail on the certificate issued for such assembly room may be used.

AISLES AND SEATING. — Seats for auditorium, chapel, vestry or assembly room, and each gallery, shall be not less than 2' 6" from back to back, measured horizontally, and no seat shall have more than seven seats between it and an aisle. The aisles in the auditorium and galleries shall be of such width as directed, and in the chapel, vestry or assembly room, with seats on both sides, shall be not less than 2' 6" in width where they start and increase 1" in width for every 5' in run toward the exits; and with seats on one side shall be not less than 2' 3" in width where they start and increase $\frac{1}{2}$ " in width for every 5' 0" in run; but if uniform width is desired, the maximum widths as above shall be maintained. For an auditorium, chapel, vestry or assembly room, having portable seats, floor cleats or other approved device for securing the seats in place shall be used. For an approximate estimate of seating capacity for an auditorium, chapel, vestry or assembly room, six square feet of floor space shall equal one seat.

BOILER, FUEL AND STORAGE ROOMS. — In buildings hereafter erected, and in existing buildings if so directed, no boiler, fuel or storage rooms shall be placed under an egress, vestibule or stairway, and wherever located, if so directed, they shall be enclosed in masonry or fireproof walls with fireproof ceilings, and all openings in the walls to the basement or building shall be provided with self-closing fireproof or automatic fire doors. The floors of boiler and fuel rooms, if so directed, shall be of hard burned brick set on edge in cement.

HEATING AND VENTILATION. — For a mechanical system with the temperature of the outside air at zero, or for a gravity system with the auditorium, chapel, vestry or assembly room at seventy degrees F., and with the temperature of the outside air not less than forty

degrees F. below that of the air entering the auditorium, chapel, vestry or assembly room through the inlets necessary to maintain seventy degrees F. therein, the apparatus shall insure the removal near the floor levels, through ventiducts by the aid of heat or its equivalent, with approved regulating dampers, of not less than two and one-half cubic feet of air per minute for each foot in area of the auditorium, chapel, vestry or assembly room floors. Such apparatus shall also have means to supply, through properly located inlets, pure air equal to the amount removed, and at such height from the floors as to insure proper circulation, with means for the proper heating of such air when necessary, and with approved regulating, protecting and mixing dampers or other approved methods for regulating the temperature, so that no uncomfortable draughts will be felt, and that the difference in temperature between any two points on the breathing plane, not less than 2' 0" from an outside wall, will not exceed three degrees F.; and it shall have sufficient means for heating as to maintain a temperature throughout the auditorium, chapel, vestry or assembly room of seventy degrees F. in zero weather. The velocity of the air entering the ventiducts shall not exceed four hundred and fifty feet, and through the grilles of the inlets shall not exceed three hundred and fifty feet, per minute. The parlors, social and other rooms shall have approved ventilation, and shall be provided with sufficient heat for their respective uses. Direct radiation may be installed in the auditorium, chapel, vestry or assembly room only in such amounts as to heat the same to a temperature of sixty degrees F., and in vestibules, sanitary and toilet rooms to at least seventy degrees F., in zero weather. Provisions may be made for reversing any of the above circulation for use when heat is not required. All fresh-air rooms, heating chambers and heating and ventilating ducts or flues shall be of masonry, or metal of suitable gauge thoroughly stayed and secured in place. Steam, hot water, electricity, furnaces or jacketed stoves may be used for heating. Provisions shall be made, if so directed, for the installation of a primary heating apparatus or an air-washing apparatus, or both.

SANITATION.—Where suitable water supply and sewerage are available, the sanitary rooms may be located in the basement or in any story of the building, and in buildings hereafter erected, and in existing buildings, if so directed, they shall be suitably lighted from outside; the sanitary rooms shall have floors and base of non-absorbent material; the base shall be not less than 6" in height, with sanitary cove at the floor level, and suitable hose connections and floor drains with traps shall be provided. The kitchen and boiler room shall each have a suitable sink, and each sanitary room, and elsewhere as directed, shall have an approved number of lavatories and drinking fountains. The sanitary rooms shall have at least one

water-closet for every three hundred persons, or majority fraction thereof, that the building will accommodate, for women; and at least one water-closet for every six hundred persons, or majority fraction thereof, and at least one urinal for every four hundred persons, or majority fraction thereof, that the building will accommodate, for men; and the respective doors to the sanitary rooms shall be plainly marked "Men" or "Women." Toilet rooms connected with office, study, emergency or other rooms shall have a water-closet and a lavatory. All water-closets and urinals shall have approved flushing devices, and approved local vents connected with a duct of combined area, except as otherwise directed, to a ventiduct provided with mechanical or other approved means for maintaining proper circulation. Where suitable water supply and sewerage are not available, approved earth closets or privies and urinal trough shall be provided, if so directed. The installation of the above shall be in accordance with plumbing ordinances or rules of the city or town in which the building is located, if such exist; otherwise in accordance with the plumbing rules formulated by the State Examiners of Plumbers.

FIRE PROTECTION. — The basement and each story of the building shall have such means for extinguishing fire, consisting of stand pipe and hose or approved fire extinguishers, or both, as the inspector shall direct and locate, and such appliances shall be kept at all times in good condition and ready for use. Where standpipes and hose are installed, approved hose racks and test cocks shall be provided. There shall be no inflammable decorations or draperies used in the building.

LIGHTING. — The vestibules, corridors, egresses and stairways shall be suitably lighted, and a vestry or assembly room having a stage, and each gallery therein, shall have a suitable number of emergency lights, to be controlled near the main entrances of the vestry or assembly room, and, if electric lights are used, the above lighting, together with the illumination of the exit signs, shall be supplied from a source separate from that of the general service, if circumstances will permit; or, where gas is available, it shall be used as an auxiliary to the general service, or for the full lighting if so directed. All lights used on the stage or platform, when scenery or other stage appliances are used, shall be suitably guarded. The installation of electrical apparatus for furnishing light, heat or power, and all wiring and work connected therewith shall be in accordance with the rules of the National Board of Fire Underwriters. Where the general and other lighting is by lamps, they shall be of metal, secured in place, and where necessary to use as emergency lights or for illuminating exit signs they shall be provided with suitable shades so as to burn continuously.

FIRE STOPS. — In buildings hereafter erected, or in a building in

which alterations shall be made for the purpose of using it or continuing its use in whole or in part as a church, fire stops shall be provided, as directed, in floors, walls and stairways, and if partitions around stairs are not of brick, or its equivalent, they shall be filled in solid between the studs and plastered with cement plaster upon metal lath; and such further means throughout the building as may be necessary to prevent the spread of fire or its communication from any steam boiler or heating apparatus therein shall be provided.

BOILERS AND MACHINERY.—Steam boilers and their installation and fittings shall be in accordance with the rules formulated by the Board of Boiler Rules. Engines, motors, pumps, blowers or fans, and all other machinery shall have approved foundations of masonry, or rest on steel beams of approved size, supported by masonry; all to be guarded as the inspector shall direct.

FIRE ESCAPES.—In existing buildings, where a fire escape may be considered as equivalent to a required exit, it shall be of such width and construction as the inspector shall direct, and the balconies of the fire escape, where directed, shall connect with the floor from which it leads by doors level with such floor and balcony, and the stairs shall extend to the ground.

PLANS AND SPECIFICATIONS.—For a building designed to be used, in whole or in part, or for a building in which alteration shall be made for the purpose of using it or continuing its use, in whole or in part, as a church, shall be deposited with the Supervisor of Plans, Building Inspection Department of the District Police, State House, Boston, in accordance with section 15, chapter 655, Acts of 1913. Such plans shall show the designated name of each room and the number of persons the room is to accommodate; where steam or hot water is to be used for heating, they shall show the location, amount and class of radiation and the size of feed and return pipes.

J. H. WHITNEY,
Chief of the District Police.

The regulations relating to the erection, alteration and inspection of theatres, special and public halls, and miscellaneous halls were printed in my Annual Report of 1913, and will be found upon pages 74 to 92 of such report.

In accordance with the provisions of chapter 806, Acts of 1913, the Board of Elevator Regulations provided for therein framed the elevator and escalator regulations and submitted the same to Your Excellency and the Honorable Council for approval, as required by section 7 of the Act. The regula-

tions thus submitted received approval on May 20, 1914, but when the same were referred to me by Your Excellency, as provided by statute, certain changes and amendments were found necessary in order to prevent misunderstanding and conflict of opinion. The attention of the Board of Elevator Regulations was called by me to the necessity for such changes, and action was at once taken by the Board, the amendments and changes being made and submitted to Your Excellency and the Honorable Council under date of July 7, 1914, being duly approved in council upon the same date and referred to me as Chief of this Force. In the meantime arrangements had been made to obtain a special appropriation of \$1,500 to provide for the printing and distribution of 20,000 copies of the regulations, which appropriation was granted by the enactment of chapter 734, Acts of 1914, approved July 2 of that year. Orders were at once placed with the State printers, and the first supply was received Aug. 10, 1914.

The demand for copies of the regulations has been so extensive that I have found it necessary to confine the distribution to elevator manufacturers, building inspectors, insurance inspectors, industrial establishments and business firms and corporations throughout the Commonwealth. Arrangements were also made for the printing of 5,000 copies of an extract from the regulations, such extract consisting of the regulations applying to the operation of elevators and the granting of operators' licenses. These were specially prepared for the instruction and use of elevator operators.

To the present time we have distributed about 15,000 copies of the complete regulations and about 2,000 copies of the extract.

The duties of enforcing the provisions of the elevator law, so called, and the regulations framed by the Board, in the cities and towns of the Commonwealth not having a building department or an inspector of buildings, is imposed upon the building inspection department of this Force, and as there are but 51 cities and towns which have a building department or an inspector of buildings, it will at once be noted that the building inspection department of this Force is

called upon to perform such duties throughout the remaining 302 cities and towns of the Commonwealth.

The following is a copy of the statute and of the regulations framed by the Board of Elevator Regulations:—

ACTS OF 1913, CHAPTER 806.

AN ACT RELATIVE TO THE INSTALLATION, ALTERATION AND INSPECTION OF ELEVATORS AND TO THE APPOINTMENT OF A BOARD OF ELEVATOR REGULATIONS.

SECTION 1. In cities and towns not having a building department or an inspector of buildings, the installation and alteration of all elevators shall be under the supervision of the inspectors of the building inspection department of the district police. In cities and towns having an inspector of buildings or a person acting as such, the installation and alteration of all elevators shall be under the supervision of such inspector. No elevator shall hereafter be installed or altered until a copy of the plans and specifications of such elevator or of the proposed alterations shall have been filed by the owner of the premises where the elevator is to be installed or altered, or by the manufacturer of the elevator, with the inspector having jurisdiction, and a certificate of approval or a specification of requirements shall have been issued by him.

SECTION 2. On completion of the work of installation or alteration, the manufacturer of the elevator or the person making the alterations shall make a practical test of the safety devices of the elevator in the presence of the inspector, and if the test is satisfactory to the inspector, he shall issue a certificate approving the elevator and safety devices thereof.

SECTION 3. All elevators shall be thoroughly inspected and a practical test made of the safety devices required therefor at intervals of not more than one year, and at such other times as may be deemed necessary by the inspector having jurisdiction thereof. Within ten days after the inspection, the inspector shall report the result thereof to the chief of the district police, upon forms to be furnished by him. This requirement for the making of inspection reports shall not apply to the city of Boston.

SECTION 4. If, in the judgment of any inspector having jurisdiction thereof, an elevator is safe, and if the elevator has been constructed in the manner required by law or by regulations made by the board of elevator regulations as hereinafter provided, the inspector shall issue a certificate to that effect to the owner of the elevator, or to the person in charge thereof, and the owner of the elevator or the person in charge thereof shall post the certificate in a conspicuous place in or near the cab or car of such elevator. If

in the judgment of the inspector, the elevator is unsafe or dangerous to use, or has not been constructed in the manner required by law or by the regulations made by the board of elevator regulations as hereinafter provided, the inspector shall immediately post conspicuously upon the entrance or door of the cab or car of such elevator, or upon the elevator, a notice of its dangerous condition, and shall prohibit the use of the elevator until it has been made safe to the inspector's satisfaction. No person shall remove such notice or operate such elevator until the inspector has issued his certificate as aforesaid.

SECTION 5. Any owner, operator or person in charge of an elevator, or any person employed by any firm, corporation, or individual to inspect an elevator shall, if he thinks such elevator is unsafe, report the fact in writing to the inspector having jurisdiction thereof who shall forthwith inspect such elevator. If any accident occurs to an elevator, the operator, person in charge or owner having knowledge thereof shall immediately report such accident to the inspector having jurisdiction who shall forthwith inspect such elevator.

SECTION 6. Within one month after the passage of this act the governor, with the advice and consent of the council, shall appoint a board, to be called the Board of Elevator Regulations. The said board shall frame regulations relating to the construction, installation, alteration and operation of all elevators, now installed or to be installed, and relative to the location, design and construction of shafts or enclosures for elevators, safety devices, gates and other safeguards, protection against the elevator or hoisting machinery, and means to prevent the spread of fire, and also such regulations as will make uniform the work of the inspectors of the building inspection department of the district police and of inspectors of buildings throughout the commonwealth.

SECTION 7. The board of elevator regulations shall be composed of seven members, one of whom shall be a consulting engineer who shall act as chairman, one an inspector of the building inspection department of the district police, one the building commissioner of the city of Boston, one an inspector of buildings of some other city in the commonwealth, one a representative of a liability insurance company licensed to write such insurance in the commonwealth, one a representative of an elevator manufacturer, and one an experienced elevator constructor. The said board shall, within three months after its members are appointed, draft regulations as aforesaid, and submit the same to the governor and council for their approval. Within sixty days after such regulations have been submitted to the governor and council, they shall approve the same with such alterations and amendments and after such public hearings as

they may deem proper, and the regulations, so altered and amended, shall then be referred by the governor to the chief of the district police, who shall furnish upon application a printed copy of the regulations to all manufacturers of elevators operating in the commonwealth, and to all inspectors of buildings in the cities and towns of the commonwealth, and to all others who are concerned. It shall be the duty of the inspectors of the building inspection department of the district police and the department of buildings or inspectors of buildings of cities and towns to see that the said regulations are complied with.

SECTION 8. The board of elevator regulations shall serve without compensation and shall be dissolved upon the approval, by the governor and council, of the regulations made as above provided.

SECTION 9. Any person engaged in any inspection, alteration, construction, repair or operation of elevators may, from time to time, hereafter by petition in writing to the governor and council request that rules and regulations established under this act be altered or amended. The governor may grant public hearings before the governor and council upon such petition, and if he deems it advisable may appoint a new board of elevator regulations to consist of seven members as provided in section seven of this act. Such board shall, within three months after its appointment, draft such alterations or amendments as they deem advisable and submit the same to the governor and council for their approval as provided in section seven. Upon the approval by the governor and council of such alterations or amendments, they shall become part of the rules and regulations pertaining to elevators and shall have the same force and effect as the other rules and regulations established under section seven. The board established under this section shall, upon such approval by the governor and council be dissolved.

SECTION 10. For the purpose of carrying out the provisions of this act, the board of elevator regulations may expend such sum, not exceeding fifteen hundred dollars, as shall be approved by the governor and council.

SECTION 11. Whoever is aggrieved by the order, requirement, or direction of an inspector of buildings of a city or town except in the city of Boston, may, within ten days after the service thereof, appeal to a judge of the superior court for the county in which the building to which such order, requirement or direction relates is situated, for an order forbidding its enforcement; and after such notice as said court shall order to all parties interested, a hearing may be had before said court at such early and convenient time and place as shall be fixed by said order; or the court may appoint three disinterested persons, skilled in the subject-matter of the controversy, to examine the matter and hear the parties; and the decision

of said court, or the decision, in writing and under oath, of the majority of said experts, filed in the office of the clerk of courts in said county within ten days after such hearing, may alter, annul or affirm such order, requirement or direction. Such decision or a certified copy thereof shall have the same authority, force and effect as the original order, requirement or direction of the inspector. If such decision annuls or alters such order, requirement or direction of the inspector, the court shall also order the said inspector not to enforce his order, requirement or direction, and in every such case the certificate required by this act to be issued by the inspector shall thereupon be issued by said court or by said experts.

SECTION 12. Any person, firm or corporation violating or failing to comply with any provision of this act, or of any regulation established hereunder shall be punished by a fine of not more than five hundred dollars for every such offence, subject, however, to the right of appeal as provided in section eleven of this act except that in the city of Boston the right of appeal shall be the same as that provided by section seven of chapter five hundred and fifty of the acts of the year nineteen hundred and seven.

SECTION 13. Sections twenty-seven and twenty-eight of chapter one hundred and four of the Revised Laws, sections seventy-four and ninety-six, in so far as such sections relate to elevators, of chapter five hundred and fourteen of the acts of the year nineteen hundred and nine, chapter four hundred and fifty-five of the acts of the year nineteen hundred and eleven, and chapter three hundred and eighteen of the acts of the year nineteen hundred and twelve, in so far as such chapter relates to elevators, and chapter four hundred and seventy-nine of the acts of the year nineteen hundred and twelve, and all acts and parts of acts inconsistent herewith are hereby repealed.

SECTION 14. Sections six, seven, eight and ten of this act which relate to the appointment, duties and expenses of the board of elevator regulations shall take effect upon its passage, and the remainder of this act shall take effect thirty days after the approval by the governor and council of the regulations framed by the board of elevator regulations.

Elevator and Escalator Regulations, taking Effect June 19, 1914.

DIVISION A. DEFINITIONS.

1. *Definitions.*

In these Regulations the following terms shall have the meanings respectively assigned to them. They are not intended, however, as a complete glossary of terms used in connection with elevator installations:—

a. An *elevator* is a hoisting mechanism, equipped with a car, which moves in guides in a substantially vertical direction, and which is designed to carry passengers or freight.

(Endless belts, conveyors, chains, buckets, etc., used for the purpose of conveying and elevating materials are not included by the term "elevator.")

b. A *passenger elevator* is an elevator used primarily for carrying passengers.

c. A *freight elevator* is an elevator used primarily for carrying freight.

d. A *hatchway-type elevator* is an elevator running through floor openings provided with hatch covers, each of which is opened automatically as the car approaches the landing and is closed automatically as the car leaves the landing.

e. A *carriage-type elevator* is a freight elevator with a platform having no suspension sling frame, but which is raised by cables dropping from winding drums or sheaves over the wellway and connected to the platform at four or more points.

f. A *sidewalk-type elevator* is an elevator operating with no lifting or counterweighting mechanism above the upper landing level.

g. A *selective automatic button-control elevator* is an elevator the operation of which is controlled by push buttons in such a manner that all floor stops are automatic.

h. A *traction-type elevator* is an elevator whose elevating power is transmitted by means of friction between the lifting cables and the drums or sheaves.

i. A *steam hydraulic-type elevator* is an elevator operated by water from a closed tank, to which steam or air pressure is applied to raise the car.

j. A *dumb-waiter* is an elevator, equipped with a car which has a clear platform area of not exceeding nine square feet, which is designed and used for freight only, and which has a carrying capacity not exceeding 500 pounds.

k. The term "*power elevators*" excludes elevators operated by hand.

l. A *full-automatic gate* is a gate which is opened automatically by the action of the elevator car as it approaches the landing, and which closes automatically by gravity or by direct mechanical action of the car as the car leaves the landing.

m. A *semi- or half-automatic gate* is a gate which (1) is opened by the ascending elevator car approaching the landing; (2) is not opened by the descending elevator car but which may be opened by hand; (3) is held open by the elevator car while the latter remains stationary at the landing; (4) closes automatically by gravity when the elevator car leaves the landing.

n. A *gravity gate* is a gate which is not opened by the motion of

the car but which may be opened by hand, and which will be held open by the elevator car when the latter is at the landing, and which will close automatically by gravity when the elevator car leaves the landing.

o. An *escalator* is a moving continuous stairway or inclined runway designed for elevating or lowering passengers.

(Endless belts, conveyors, chains, buckets, etc., used for the purpose of conveying and elevating materials alone and upon which passengers are at no time carried are not classed as escalators.)

Stevedores handling freight on wharf ramps, and other workmen similarly in charge of freight, riding on similar ramps, are not classed as passengers.)

p. An *existing installation* is an elevator or escalator, the erection of which was begun before the establishment of these Regulations and not materially altered, nor moved to a different location subsequently thereto.

q. A *new installation* is:—

(1) An elevator or escalator, the erection of which is begun subsequently to the establishment of these Regulations.

(2) An existing elevator or escalator moved to a new location subsequently to the establishment of these Regulations.

(3) An existing installation which is materially changed subsequently to the establishment of these Regulations.

(Any changes other than ordinary repairs are to be considered as material changes.)

(4) Any complete part of an existing installation which is replaced.

DIVISION B. REGULATIONS APPLYING TO NEW ELEVATOR INSTALLATIONS.

Section 1. Shaftways.

2. Thoroughfare under Elevators.

a. The bottoms of shaftways of elevators and of counterweights shall be kept clear of all materials not necessary to the elevator installation, and shall not be used as thoroughfares or passages.

(The bottom of the shaftway of a hand-power carriage-type elevator is an exception to this Regulation, and may be used as a thoroughfare or passage.)

b. If an elevator or a counterweight does not run to the lowest floor of a building, the space under the bottom of the shaftway of such an elevator or counterweight shall not be used for any purpose unless (1) both elevator car and counterweight are equipped with safety devices which will stop the car and counterweight if the cables attached to them should break or become slack; (2) the construction of the bottom of the shaftway under the car and the counterweight is such as to withstand, without injury, the falling at full normal

speed of the car loaded to its capacity and of the counterweight; and (3) bumpers of spring or equivalent type are installed under both car and counterweight when their normal speed exceeds 150' 0" per minute. (See, also, Regulation 58c. Data on bumper capacity will be found in Regulation 58 d.)

c. No hatchway cover shall be used as a thoroughfare or passage unless the elevator is of the sidewalk type. If there is a vertical lifting hatch cover, it shall not be used as a thoroughfare or passage unless there is a clear space above the cover, when at the top of its travel, of not less than 2' 0".

3. *Enclosures around Elevator Shaftways, in General.*

a. The shaftways of all elevators shall be enclosed throughout their height with walls of brick, or terra cotta, or wire lath and plaster, or wired glass set in metal frames or other fire-resisting construction, except (1) elevators serving only two adjacent stories; (2) elevators within the wellways of surrounding stairs; (3) elevators of carriage type and of hatchway type; (4) elevators outside of buildings; and (5) that part of a dumb-waiter shaftway located between the floor and a counter-top.

(The details of construction, thickness of walls, thickness, size and method of setting wired glass, etc., shall conform to the local building requirements, if any, and otherwise to the requirements of the inspector having jurisdiction. All sash shall be stationary unless in the outer wall of the building. Frames and sash in the outer wall of the building may be of wood and the sash glazed with common glass if not conflicting with the local building requirements. Two or more elevators may be installed in the same shaftway without partitions between them.)

b. Elevator machine rooms, open to shaftways enclosed with fire-resisting construction, shall be similarly enclosed.

(An elevator machine room shall be considered as open to the shaftway unless separated by a partition or door of $\frac{3}{16}$ " steel or arch plate, or by a partition or door of fire-resisting construction, such partition or door being cut out only for cables and machinery and fitting closely around such cables and machinery.)

c. Fire-resisting shaftway enclosures shall be extended through and at least 3' 0" above the roof if the elevator serves the top story of the building, except in the case of a dumb-waiter shaftway terminating under a counter-top, and except where a solid platform is located under the machinery and sheaves at the top of the shaftway entirely blocking it except for the openings for cables.

d. Where the fire-resisting shaftway enclosures are not required to continue through the roof, the top of the shaftway shall be of the same fire-resisting construction as required for the walls. (See Regulation 3a.)

e. If the fire-resisting shaftway enclosures continue through the roof, a skylight or skylights shall be located in the top of the shaftway, or a window or windows shall be located in the side walls of

the enclosure, at the top, unless there is a solid platform at the top of the shaftway entirely blocking it except for openings for cables, etc. The total glass area of such skylights or windows shall be in each case (1) not less than one-half the area of the shaftway; (2) not less than three square feet if the area of the shaftway is three square feet or more; and (3) the full area of the shaftway if the latter is less than three square feet.

(The object of the skylights and the windows is to provide a vent for smoke and hot gases in case of fire; consequently, the glass in the skylights and windows must be plain glass, not wired glass, or the skylights and windows must be arranged to open automatically to the required area by the fusing of fusible links inside of the shaftway near the top, in which case wired glass may be used. If plain glass is used in a skylight, the skylight shall be protected by a galvanized iron or steel netting of not more than 1" mesh, made of not less than No. 12 gauge wire, supported on metal supports not less than 6" above the skylight, in order to prevent breakage by débris from an adjacent fire.)

f. If there is a solid platform under the machinery and sheaves (see Regulation 21) at the top of the shaftway entirely blocking it except for the openings for cables, etc., windows of construction and as nearly as possible the area specified in Regulation 3*e* shall be installed in the shaftway immediately below such solid floor, and either in the outside wall of the building or above the roof.

(If there is no outside wall forming the shaftway, and if the solid floor in the shaftway is not above the roof, no vent, skylights or windows will be required. Vent windows above the roof and below the solid floor in the shaftway need not be located so close to the roof as to interfere with roof flashing.)

4. Enclosures around Shaftways of Elevators serving only Two Adjacent Stories.

a. The shaftways of elevators serving only two adjacent stories shall be enclosed throughout the entire height of, at least, one of the two stories with fire-resisting construction, such as specified in Regulation 3*a*, except shaftways around (1) dumb-waiters; (2) elevators within the wellways of surrounding stairs; (3) elevators of carriage type and of hatchway type; and (4) elevators outside of building.

b. If the fire-resisting construction is used in the lower of the two stories, the shaftway in the upper story shall be enclosed to a height of not less than 7' 0" above the floor with metal grille work which will reject a ball 2" in diameter, or with equivalent non-combustible construction.

c. If the fire-resisting construction is used in the upper of the two stories, and if the elevator is a passenger elevator, the shaftway in the lower story shall be enclosed from floor to ceiling on the side where there is a landing opening and to a point at least 7' 0" high on the other sides with grille work which will reject a ball 2" in diameter, or with equivalent non-combustible construction.

d. If the fire-resisting construction is used in the upper of the two

stories, and the elevator is a freight elevator, the shaftway in the lower story shall be enclosed with guards not less than 3' 4" above the floor, such as grille work, sheathing, wood or metal double-rail fences, etc., securely fastened in place.

e. The requirements of Regulation 3*b*, 3*c*, 3*d*, 3*e* and 3*f* shall be fulfilled where they are applicable to the shaftway enclosures of elevators serving only two adjacent stories.

5. *Enclosures around Elevator Shaftways in Stairwells.*

a. The shaftways of all elevators within the wellways of surrounding stairs shall be enclosed in each story with either (1) fire-resisting construction as specified under Regulation 3*a*, or (2) metal grille work of such design as will reject a ball 2" in diameter.

b. All such enclosures shall extend from floor to ceiling at the side through which there is an entrance to the elevator car, except on the top floor, and shall extend at least 7' 0" elsewhere above all stair treads and landings.

6. *Enclosures around Shaftways of Carriage-type Elevators.*

a. The shaftways of carriage-type elevators which serve two floors only need not be enclosed except that the sides of the floor opening shall be protected by guards not less than 3' 4" above the floor, such as grille work, sheathing, wood or metal double-rail fences, etc., securely fastened in place.

b. The shaftways of carriage-type elevators which serve more than two floors shall be completely enclosed from the second story floor up with fire-resisting construction such as specified in Regulation 3*a*.

(Carriage-type elevators serving the first and second floors are usually kept at the second floor level when not in use, so that the first floor may be used as a passage. In this position the car serves to obstruct the opening for the passage of smoke or fire. If the elevator serves three stories, one floor opening is always left unprotected, in which case the enclosures required above are necessary to prevent the spread of fire.)

c. The requirements of Regulation 3*b*, 3*c*, 3*d*, 3*e* and 3*f* shall be fulfilled where they are applicable to shaftway enclosures of carriage-type elevators.

7. *Enclosures around Shaftways of Hatchway-type Elevators.*

a. Enclosures or guards, not less than 3' 4" above the floor, such as grille work, sheathing, wood or metal double-rail fences, etc., securely fastened in place, shall be located around power elevator hatchway openings equipped with automatic hatch covers, except around hatchway openings equipped with vertical lifting hatch covers above which, at the upper limit of their travel, there is a clear space of 2' 0" or more.

b. Similar enclosures or guards shall be placed around the shaftways of power elevators, at the lowest floor which the elevator serves, if the opening in the floor above is protected by a hatch cover.

8. *Enclosures around Elevator Shaftways outside of Buildings.*

a. The shaftways of elevators located outside of buildings shall be enclosed to a height 7' 0" above the ground with a solid enclosure or with grille work or lattice work which will reject a ball 2" in diameter.

9. *Opening of Standing Portions of Enclosures.*

a. All standing portions of enclosures arranged to open to form larger openings than are obtained at the regular landing doors shall be securely fastened at top and bottom.

10. *Netting on Grille-work Enclosures.*

a. Grille-work, shaftway enclosures, with mesh larger than $\frac{3}{8}$ " square, shall be covered with wire netting of not more than $\frac{3}{8}$ " square mesh, made of wire not smaller than No. 20 gauge, securely attached to grille work (1) where there is less than 4" clearance between the grille work and any portion of the car or of the counterweight, and (2) where a landing door slides by with a clearance of less than 4".

11. *Enclosures around Isolated Counterweights.*

a. Counterweights running in isolated shaftways shall be enclosed throughout their height with fire-resisting construction or with sheet steel of not less than No. 16 gauge, except where located outside of buildings, in which case solid enclosures not less than 7' 0" high shall be installed.

b. Counterweight enclosures shall be provided with removable sections, not less than 2' 0" high and the full width of the enclosure, located near the top, for the inspection of counterweights and cables.

(Requirements for enclosing counterweights located in the elevator shaftways will be found in Regulation 41.)

12. *Openings and Set-backs in Outside Walls of Freight Elevator Shaftways.*

a. Where the enclosing wall of the shaftway of a power freight elevator is the outside wall of a building, and where the elevator car is open (see Regulation 12e) toward this outside wall, the shaftway side of the outside wall shall be filled in wherever the clearance between the elevator car and the wall is more than 4".

b. The filling-in may be done with any form of construction giving a firm, flush surface if there is no conflict with local building

regulations; or it may be done with wooden slats not less than 3" wide by $\frac{7}{8}$ " thick and set vertically not more than 4" apart; or it may be done with metal pipes or bars set vertically not more than 4" apart, provided that such slats, pipes or bars are strongly secured in place with no projections into the shaftway and with all cross bars and other supports, except close-fitting pipe clips, at the back of such slats, pipes or bars.

c. Whatever form of construction is used for filling in, the clearance between the face of the filling-in material and the car shall be not more than 2".

d. All window or other openings or recesses in such outside wall, except the landing door opening, shall be filled in flush or slatted or barred as provided for in Regulation 12b and 12c, whatever may be the clearance between the elevator car and the wall. The filling-in material shall be made flush with the wall or with the filling-in on the wall, as the case may be. (For exception, see Regulation 12e.)

e. If the elevator car is provided on the side adjacent to the outside wall with a gate which closes automatically when the ascending car leaves the landing at which there is an opening in the outside wall, and which is of construction and dimensions specified in Regulation 16a and 16b for landing gates for openings in outside wall, then the elevator car shall not be considered as open on the side toward the outside wall, and the filling in of set-backs and openings in such wall shall not be required above the landing opening in the outside wall.

13. *Thresholds and Other Projections.*

a. Substantial bevelled metal or wood plates shall be located under all thresholds, beams and other fixed construction projecting into shaftways 1" or more beyond the general line of the shaftways of the elevator on sides where there are car openings.

(Dumb-waiters are excepted from this Regulation.)

b. The bevelled plates shall extend from the end of the projection to the vertical wall, and the bevelled surfaces shall make an angle of not less than 60° with the horizontal.

14. *Landing Doors.*

a. All landing openings in solid fire-resisting shaftway enclosures shall be provided with fire-resisting landing doors and frames without open-grille work or movable panels or other openings. Tin-clad doors, rolling steel doors, Kalamein doors, hollow metal fire doors, steel frame doors glazed with wired glass, or doors of other similar construction shall be considered as "fire resisting." Wired glass

panels may be used in doors, but shall be subject to the restrictions specified in Regulation 3*a*.

(It is desirable that all such landing doors, which are left open when the car is not at the landing, should be provided with self-closing devices operated by fusible links.)

b. All landing openings in grille-work shaftway enclosures of passenger elevators shall be provided with landing doors, made either of fire-resisting construction or of grille work, which will reject a ball 2" in diameter.

c. Landing doors for passenger elevators shall slide in a horizontal direction, except that swing doors will be permitted when equipped and used with an interlocking device, which prevents the starting of the elevator when any landing door is open.

d. Landing doors for all passenger elevators and for freight elevators without landing gates, except dumb-waiters, shall be of such construction and design that when locked they cannot be opened from the landing side without a key, except when the car is at the landing.

(Such landing doors need not be arranged so that they can be opened from the landing side even when the car is at the landing, except in the case of a selective automatic button-control type elevator or a similar elevator where there is no operator.)

e. Landing doors, which cannot be opened from the landing side except by key, shall be arranged to be opened by key at one landing at least.

(The object of this Regulation is to make it possible to close all landing doors when the elevator is shut down and the attendant is absent, thus preventing interference with the elevator by unauthorized persons. It is recommended that all such landing doors be arranged to be opened by key from the landing side to facilitate entrance to the shaftway above and below the car for inspection and repairs and in case of emergency.)

f. Landing doors for selective automatic button-control elevators (except dumb-waiters which operate at speeds less than 200' 0" per minute) are to be self-closing and self-locking and equipped with interlocking devices such that (1) no landing door can be opened unless the car is at the landing, and (2) the car cannot be started unless all the landing doors are closed. Means shall be provided to prevent the starting of the car by the closing of the doors without operating one of the push buttons.

(When car-switch control is used in a selective automatic button-control elevator, the interlocking devices shall, nevertheless, remain in operation.)

g. Landing doors for passenger elevators with shipper ropes accessible from the landings when the landing doors are closed shall be self-closing and self-locking and equipped with interlocking devices such that (1) no landing door can be opened unless the car is at the landing, and (2) the car cannot be started unless all landing doors are closed.

h. Landing doors for passenger elevators and for freight elevators which have no landing gates shall be set not more than 3" back from the edges of the thresholds, and so that no part of the door or its hardware shall project into the shaftway beyond the edges of the thresholds.

(The landing doors may be set not more than 4" back from the edges of the thresholds for selective automatic button-control elevators.)

Care should be taken in designing landing doors and enclosure fronts to allow for the closing and locking mechanism of the doors, for door checks, etc.; 2" is often required for such hardware.)

i. Landing doors for dumb-waiters, where the bottom of the opening is not less than 18" above the landing floor may be counterbalanced to stay open, but if the shaftway enclosures are of fire-resisting construction, fusible links are to be located inside of the shaftway, or at the lower edges of the doors, and so connected that upon the melting of the links the doors will close.

j. Landing doors for dumb-waiters, where the bottom of the opening is less than 18" above the landing floor, and the door opening is large enough to be mistaken for a doorway to stairs or to an adjacent room, shall be in two parts, one over the other, the lower of which shall extend at least 18" above the landing floor and shall be arranged to be opened only after the upper part has been opened, or gates which close when the car leaves the landings shall be installed in addition to the landing doors.

(The upper part of the two-part doors may be counterbalanced to stay open, and if so shall be provided with fusible link as in Regulation 14*i*. The object of making the door in two parts, of which the upper part must be opened first, is to prevent a person from falling down the shaftway. The gate would serve the same purpose.)

k. Dumb-waiters which are under counter-tops at the upper limit of their travel are not required to have landing doors.

15. *Landing Gates, in General.*

a. Freight elevators having shaftway enclosures or guards, except dumb-waiters and except at the bottom landings of sidewalk-type elevators serving only two adjacent stories, shall have all landing openings in such enclosures and guards protected by gates which shall close automatically when the elevator car leaves the landing, except that no such gate shall be required at (1) a landing opening where there is a landing door, or a gate equivalent to a door, which is equipped with an interlocking device such that the door or equivalent gate can be operated only when the car is at the landing, and that the car can be started only when the door or equivalent gate is closed; or (2) at any landing opening of a car operated by a licensed operator and having at all landing openings doors, or gates equivalent to doors, so arranged that they can be opened only from the shaftway side, except by key, and which are always closed before the car leaves the landing.

b. The landing openings in the enclosures or guards around the shaftway at the bottom landing of a sidewalk-type elevator serving only two adjacent stories shall be protected by hand-operated bar, gate or chain if an automatic gate is not installed.

c. The used sides of hatch openings, having hatch covers other than vertical lifting hatch covers, shall be protected by gates which shall close automatically when the car leaves the landing, where necessary to prevent the hatch covers from being used as thoroughfares or passageways.

d. The used sides of hatch openings having vertical lifting hatch covers, above which, at their highest limit of travel, there is less than 2' 0" head room, shall be protected by gates which shall close automatically when the car leaves the landing.

e. Automatically closing landing gates of collapsible type, and automatically closing landing gates in two or more parts which meet in closing, or where the parts pass by each other in such a manner as to cause opportunity for injury due to shear, shall not be used.

(Doors which close automatically when the car leaves the landings shall be considered as solid gates, and shall be subject to the same restrictions to avoid injury due to shear or to the coming together of two or more parts of the door as are open-work gates. A gate made in two or more parts, which slide or telescope by each other in the same direction, is not prohibited by this Regulation, if the gate is solid or if the openings are $\frac{3}{8}$ " square or smaller, and if the edges of adjacent parts of the gate always lap so that danger of injury due to shear is eliminated.)

f. Gates may be "full-automatic" or "semi-automatic" or "gravity" gates, but shall close by gravity and not by the direct mechanical action of the car.

(See Regulation 11, 1*m* and 1*n*. Although gates shall not be closed by the direct mechanical action of the car, their speed of closing may be retarded by the direct mechanical action of the car.)

g. Gates are to be made of metal or of hard wood of at least as great fiber strength as ash, and are to be strong and rigid and so constructed and installed that they cannot be sprung from their guides. Bar gates hinged at one end shall be of such design and construction as to insure their accurate closing and their rigid support when closed.

h. The joints of wood gate frames shall be strongly reinforced with metal plates.

i. Gate shoes and runs on the operating side are to be of metal.

j. No gate, when closed, is to be less than 3' 4" in height, measured from the sill to the top of the upper horizontal member of the gate.

k. The lower edge of the lowest horizontal member of any gate, when closed, shall be not more than 3' 4" above the sill.

(Gates extending to the floor are strongly recommended where there is sufficient head room, as they prevent objects from rolling under the gates and falling on the car and its occupants. Double-bar gates are recommended rather than single-bar gates, where there is sufficient head room.)

l. Gate counterweights shall be boxed in or shall run in metal guides from which they cannot be dislodged. The bottoms of the boxes or of the guides shall be of such construction that the counterweights will be securely held if the counterweight ropes should break.

16. *Landing Gates at Openings in Outside Walls.*

NOTE. — Landing openings in outside walls are apt to be left unprotected except by the gates. This is dangerous to the public unless the gates are of such construction as to prevent reaching into the well and to prevent the gates from being opened except when the car is at the landing. Even when such openings are on private ways they are accessible to unauthorized persons, especially children, and the special requirements given below for such gates must be fulfilled.

a. Gates at landing openings in outside walls shall be made (1) solid, without openings, or (2) of such design as will reject a ball 2" in diameter.

b. The top of such a gate, when closed, shall be not less than 6' 0" above the sill, and the bottom shall be not more than 6" above the sill, except that where the landing opening in the outside wall is in the top story of the building the top of the gate need be only 3' 4" high above the sill.

(The 6' 0" high gates required are usually possible if there is a story above that in which the landing opening in the outside wall is located.)

c. All gates at landing openings in outside walls shall be equipped with interlocking devices which will prevent the opening of the gates unless the car is at the landing, and shall be arranged to close and lock automatically when the car leaves the landing. The interlocking mechanism shall be so located and installed that it cannot be reached by hand from outside of the shaftway when the gate is closed.

(If the gate is made solid and fills the whole opening it becomes a door rather than a gate, but must, nevertheless, be equipped with the interlocking and self-closing and self-locking device.)

d. Where the elevator is set back in a vestibule, with the landing opening not actually in the outside wall, but with an opening in the outside wall directly opposite the landing opening and usually left open, thus leaving the landing gate accessible to unauthorized persons, the gate at the landing opening shall be the same as the gates herein specified for openings actually in outside walls.

17. *Landing Gates at Ground Openings of Elevators Outside of Building.*

a. Gates at the ground openings to elevators located outside of building shall be like the gates specified in Regulation 16 for landing gates at openings in outside walls.

18. *Automatic Hatch Covers.*

NOTE. — For limitation on speed of elevators equipped with automatic hatch covers see Regulation 60d.

a. Automatic hatch covers shall be made of not thinner than $\frac{7}{8}$ " stock, strongly battened, if of wood, or of equally strong and stiff metal construction.

b. Wood automatic hatch covers shall be covered on their under sides and on their edges with sheet tin or galvanized steel with locked joints, with nail heads concealed under the joints.

c. Hinges on automatic hatch covers shall be either heavy T or heavy strap hinges secured to the floor with lag-screws, or otherwise equally securely fastened and bolted through the hatch covers.

d. Hinged hatch covers shall not be used on floor openings where the car has an area of more than fifty square feet.

e. No hook or other means of fastening hatch covers open shall be permitted.

(The hatch covers may have to be held open temporarily for repairs or testing, but this can be accomplished readily without permanent means for so doing, which might be used habitually, thus eliminating the fire cut-offs for which the hatch covers are installed.)

f. If a sidewalk-type elevator lands within the line of any sidewalk or passageway open to the public, the opening shall be protected by guards not less than 18" high before the elevator is started.

g. Where enclosures are built around the shaftways of hatchway-type elevators, the hatch covers shall not, on that account, be omitted.

19. *Bars at Exterior Windows.*

a. All exterior windows in elevator shaftways shall be protected by vertical metal bars, not less than $\frac{5}{8}$ " in diameter, located on the outside of the windows.

(This Regulation does not apply to windows located above the platform in the shaft-way under the sheaves or machinery. See Regulation 21.)

b. The bars shall be not more than 10" on centers, nor shall there be more than 10" between the window jamb and the center of the nearest bar.

c. The bars shall be attached to the masonry where there is any, and in all cases firmly secured, and in such a manner that they will not readily become loosened through the action of the weather.

d. All such bars, if of iron or steel, shall be kept thoroughly painted.

20. *Pits.*

a. The pits at the bottoms of shaftways of all power elevators, except dumb-waiters, and except carriage-type and one-story sidewalk-type elevators, shall be not less than 3' 0" deep.

(Where new elevators are installed in existing buildings a less depth of pit than 3' 0" may be permitted if a depth of 3' 0" is structurally impracticable.)

21. *Platform at Top of Shaftway.*

a. There shall be a platform immediately under the machinery and sheaves, if any, at the top of the shaftway of every elevator except dumb-waiters, hatchway-type elevators and carriage-type elevators.

(The platform shall be so placed as to give the clearance for car and counterweights at their upper limit of travel as required in Regulation 22.)

b. The platform shall fill the shaftway if the latter has a cross-sectional area of fifty square feet or less; otherwise the platform need extend only 2' 0" outside of all sheaves and machinery which should be reached for oiling and inspection.

c. If the platform does not fill the entire shaftway, the edge of the platform shall be protected by a solid baseboard at least 6" high, and where the space between the platform and the wall of the shaft exceeds 12" there shall be a hand rail securely fastened in place 2' 6" above the platform.

d. The platform shall be built and supported for a safe live load of not less than 50 pounds per square foot.

e. If the platform is made of grating it shall be of such design as will reject a ball 1½" in diameter, and upon the upper side of the grating wire netting of not more than ¾" square mesh and not smaller than No. 20 wire shall be fastened.

f. The platform, if of wood, shall be made solid of not less than 3" plank.

g. Reasonable access to the sheaves and machinery shall be provided above the level of the platform independent of the elevator car.

22. *Over-travel.*

a. The minimum over-travel of an elevator car and counterweight, except for sidewalk-type elevators and dumb-waiters, shall be 1' 0", if the car travel is through one story only and does not exceed 15' 0", and if the normal car speed does not exceed 60' 0" per minute.

b. The minimum over-travel of an elevator car and counterweight, except for sidewalk-type elevators, hand-power dumb-waiters, and dumb-waiters under counter-tops, shall be 2' 0" if (1) the car travel is through more than one story, whether or not exceeding 15' 0", and if the car travel does not exceed 50' 0" and the car speed does not exceed 100' 0" per minute, or if (2) the car travel is through one story only, but exceeds 15' 0", and does not exceed 50' 0" and if the car speed does not exceed 100' 0" per minute.

c. The minimum over-travel of an elevator car and counterweight, except for sidewalk-type elevators, hand-power dumb-waiters, and dumb-waiters under counter-tops, shall be 3' 0" if (1) the car travel exceeds 50' 0" and the car speed does not exceed 250' 0" per minute,

or if (2) the car speed is over 100' 0" per minute, but does not exceed 250' 0" per minute whatever the travel.

d. The minimum over-travel of an elevator car and counterweight shall be 4' 0" if the car speed exceeds 250' 0" per minute, but does not exceed 350' 0" per minute, regardless of the car travel.

e. The minimum over-travel of an elevator car and counterweight shall be 5' 0" if the car speed exceeds 350' 0" per minute, regardless of the car travel.

(The over-travel of the car is the distance which the car platform can rise above the top landing without any part of the car construction striking the overhead work. The over-travel of a counterweight is the distance which the counterweight can rise above its normal position when the car rests on the bumpers, or on the bottom of the shaft if there are no bumpers, without the counterweight striking the overhead work.)

In general, the greater the over-travel the better, and greater over-travel than the minima required above is desirable wherever practicable.)

Section 2. Cars and Car Enclosures.

23. Cars.

a. No elevator car, except a dumb-waiter car, shall have more than one compartment.

b. Two cars, balancing each other, and operated by the same machine, shall not be used except for (1) dumb-waiters and (2) freight elevators serving two floors only, of which all the landing openings are protected by gates or doors equipped with interlocking devices such that the cars cannot be operated unless all the landing gates or doors are closed.

c. The car platforms of direct-plunger elevators shall be secured to heads of the plungers. If the plungers are made in more than three sections the car platforms shall be secured to the bottom heads of the plungers by safety cables run inside of the plungers.

d. All power passenger elevator cars shall be constructed with steel suspension frames.

e. All power freight elevator cars having a lifting capacity of 3,000 pounds or over, and a platform area of forty square feet or more, shall be constructed with steel suspension frames.

f. The minimum factor of safety in steel suspension frames of cars shall be 8, based on the maximum rated carrying capacity plus the weight of the unloaded car.

g. No cast iron shall be used in tension as a suspension member of the suspension frame of any car.

24. Car Enclosures.

a. Elevator car enclosures or cages shall be secured to the car floors and to the suspension slings in such manner that they cannot work loose or be readily displaced.

b. All passenger elevator cars shall be enclosed on all unused sides

and on the top. The enclosures may be of wood or of metal, solid or open work, but if of open work, the design shall be such as will reject a ball 2" in diameter.

c. No power passenger elevator car shall have more than two door openings.

d. The car dome on a power passenger elevator having no gate or door at the opening to the car, or having no interlocking device such that the car cannot be started when any landing door is open, shall be cut back above the door opening, or a section shall be hinged with brass, bronze or composition hinges above the door opening, without locking, to provide an unobstructed space 15" deep from edge of threshold and extending the entire width of the car door opening.

e. All power freight elevator cars, except dumb-waiters and except carriage-type and sidewalk-type elevator cars, shall be enclosed not less than 6' 6" high on all unused sides, or to the cross-heads, where the cross-heads are less than 6' 6" high. The enclosures may be wood or metal, solid or open work, but if open work, the design shall be such as will reject a ball 2" in diameter.

f. Where the enclosure of a power freight elevator car is cut away at the front of the car to make the shipper rope accessible, such opening in the enclosure shall be cut low enough to prevent injury to the hand of the operator, and the lower edge of such opening shall be splayed at an angle of not less than 60° with the horizontal.

g. Where the elevator car enclosure is not solid, and the openings are larger than $\frac{3}{8}$ " square, wire netting of not more than $\frac{3}{8}$ " square mesh and not smaller than No. 20 gauge wire shall cover and be securely attached to the car enclosure on the outside where (1) the counterweight passes with a clearance of less than 6" between the car enclosure and the counterweight, and where (2) there is less than 4" clearance between the car enclosure and any portion of the well construction, except at the front of the enclosure.

h. Covers shall be installed on freight elevator cars except (1) dumb-waiters, (2) hatchway-type elevators, (3) carriage-type elevators, (4) sidewalk-type elevators, (5) elevators where there are automatically closing gates extending down to the floor on all landings above the lowest landing, and (6) all elevators with landing doors which open only from the wellway side and which are kept closed except when the car is at the landing. The covers shall be of wire grille work with a mesh not larger than 1½" by 3" and wire not smaller than No. 9 gauge or of other construction of equivalent strength. The covers shall be set back not more than 6" from the edge of the landing thresholds, and shall be hinged on the landing sides not less than 18" back, so as to fold back should this edge of the cover be obstructed in any manner in its descent.

i. No material, not a part of the elevator equipment, shall be permitted upon the top or cover of any elevator car.

j. There shall be a suitable emergency exit from each passenger elevator car, either by means of a trap door in the cover of the car, or by means of the opening required by Regulation 24*d*, or, in the case of elevators in battery, by doors opposite each other in the sides of two adjacent cars.

25. *Seats in Cars.*

a. Each passenger elevator, for which a licensed operator is required, shall be provided with a suitable seat for the operator. The seat shall be of folding type, attached to the side of the car, except where the seat is a fixed seat installed for passengers.

26. *Car Gates and Doors.*

a. Each power passenger elevator car shall be equipped with a gate or door at each car door opening unless (1) there is only one door opening, and unless (2) the door opening is 42" or less in width, and unless (3) there is a licensed operator in charge of the car, and unless (4) the car control is so located that the door opening can be protected by the operator when running the car.

(A car door is preferable to a car gate of the folding or collapsible type, as it gives better protection. See Regulation 26*h*.)

b. The car gate or door at each of the door openings in a power passenger elevator car, having two door openings, shall be equipped with an interlocking device which shall prevent the operation of the car when either car gate or car door is open.

(The car door at an opening for freight in a passenger elevator car need not have the interlocking device applied if the door is opened only for the occasional handling of freight and is kept locked during the use of the elevator for passenger service.)

c. The gate or door at the door opening of a power passenger elevator car, which is used without a licensed operator, shall be equipped with an interlocking device which shall prevent the operation of the car unless the car gate or door is closed. Means shall be provided to prevent the starting of the car by the closing of the doors without operating one of the push buttons. (See Regulation 14*f*.)

d. Freight elevator cars used for carrying more than three persons including the operator shall be either (1) enclosed on all sides to the same height as on the unused sides, leaving a door opening 42" or less in width, or (2) equipped with car gates or doors at all car openings.

(If a freight elevator is used at stated hours for carrying employees, portable car gates or doors and enclosures may be employed at the open sides of the car, provided that all such portable construction shall be set in place and secured at all times when the elevator is used for carrying more than three persons including the operator.)

e. The open side away from the building wall of a freight elevator car located outside of a building shall be protected by a hand-operated or automatic-closing bar or car gate.

f. Automatic-closing car gates on freight elevators, adjacent to the outside walls of buildings, may be substituted for the filling-in of offsets and openings in the outside wall.

g. Car gates and doors shall, when closed, fill the openings that they protect, except that on freight elevator cars they need be only as high as the car enclosures, and except where gates of different construction are specifically allowed. (See Regulations 12e and 26e.)

h. Car doors may be solid or of open work, but shall be of such design as will reject a ball 2" in diameter.

(Collapsible or folding gates may be used on elevator cars, but do not afford the protection of doors as they cannot be made with the small openings required for doors.)

27. *Clearance between Car and Shaftway and between Car and Counterweight.*

a. There shall be a clearance of not less than $\frac{3}{4}$ " between cars and the shaftway enclosures, and a clearance of not less than 1" between cars and their counterweights.

b. The clearance between the sill of car and the threshold of landing shall not be less than $\frac{3}{4}$ " nor more than $1\frac{1}{2}$ ".

(Regulation 27a and 27b does not apply to dumb-waiters, hand-power elevators and sidewalk-type elevators.)

For the clearance between counterweights and the shaftways, see Regulation 43a.)

Section 3. Machines; Machine Supports; Tanks.

28. *Belt and Chain-driven Machines.*

a. Belt or chain-driven machines shall not be used for passenger elevators.

b. Means shall be provided for throwing the power off from a belt or chain-driven machine as by tight and loose pulley or clutch, if the machine is not driven by a separate motor.

c. All elevator belts, except within machine enclosures, which come within 7' 0" of the floor shall be properly guarded.

29. *Friction Machines.*

a. A friction-gearing or clutch mechanism which is an integral part of the machine shall not be used to operate the winding drum of any elevator, unless the elevator is not designed or used for carrying a person or persons.

30. *Hydraulic Machines.*

a. The piston rod in tension of hydraulic elevators of the sheave type shall have a minimum factor of safety of 8, figured on the cross-sectional area at bottom of thread. Such piston rods of less

than 1" diameter shall be exposed for inspection at least once every five years. Piston rods larger than 1" diameter shall be exposed for inspection at least once every ten years.

b. Hydraulic elevator machines, except dumb-waiters, shall be equipped with piston travel-limit bumpers or stops, and shall be constructed of such strength that when the full water pressure is applied the piston will be stopped by this means before the car can be drawn into the overhead work.

c. Metal guides shall be provided for the sheave suspension yoke of vertical sheave suspension type hydraulic elevators, except dumb-waiters.

d. The valve chambers and cylinders of hydraulic elevator machines shall be provided with means for removing air.

e. The traveling sheaves of vertical cylinder hydraulic elevators shall be attached with two-part structural steel hangers and not with U straps.

31. *Support of Machines and Sheaves.*

a. The load to be supported by the elevator machine beams, when the elevator winding machine is directly supported by them and the car-hoisting cables drop vertically to the car, shall be calculated as not less than the weight of the stationary load, plus the weight of the counterweight and twice the weight of the car and of its maximum rated load.

b. The load shall be calculated as stated in Regulation 31a when the hoisting cables lead in a substantially horizontal direction from other supports to leading sheaves over the wellway.

c. When the hoisting cables lead from the elevator machine below in a substantially vertical direction to sheaves over the wellway, the load to be supported by these overhead sheave beams shall be calculated as the weight of the stationary load resting upon them plus twice the weight of the counterweights plus four times the weight of the car and of its maximum rated load.

d. The worm-gear mechanism and motor of hanger-type elevator machines shall not be located in the shaftway, except for dumb-waiters.

32. *Enclosure of Gears.*

a. All gears operating winding drums, except those of hand-power elevators, shall be enclosed by suitable guards.

33. *Enclosures around Machines.*

a. Elevator machines, in rooms open to shaftways enclosed with fire-resisting construction, shall be similarly enclosed. (See Regulation 3b.)

b. Elevator machines located on the floor shall be enclosed by solid partitions or grille work not less than 4' 0" high. The mesh or grille work shall be such as to reject a ball 2" in diameter.

c. Partitions, guards and head room around elevator machines shall be so located as to make all parts of the machines properly accessible for inspection and care.

34. *Discharge Tanks of Hydraulic Elevators.*

a. The discharge tanks of hydraulic elevators shall be covered to prevent dirt and material falling into them, and shall be cleaned at least every two years.

b. Such discharge tanks shall be vented so as to be open to atmospheric pressure.

35. *Pressure Tanks for Hydraulic Elevators.*

a. The pressure tanks for hydraulic elevators shall be built of either flanged or boiler steel or fire-box steel or extra soft steel, or wrought iron, the properties of which shall conform to the requirements of the Air Tank Regulations prescribed by the Massachusetts Board of Boiler Rules.

b. The maximum pressure to be allowed on pressure tanks for hydraulic elevators shall be determined by the formula stated in the Air Tank Regulations prescribed by the Massachusetts Board of Boiler Rules. The factor of safety in the above formula is to be the lowest factor of safety allowed by Regulation 35c. The tensile strength used in the above formula shall be the tensile strength stamped on the plates by the manufacturer, or if not so stamped, shall be taken as 45,000 pounds for wrought iron and 55,000 pounds for steel.

c. The lowest factor of safety to be used for the pressure tanks for hydraulic elevators shall be 4, if the longitudinal joints are of butt and double-strap construction.

d. The longitudinal joints of the shell of pressure tanks for hydraulic elevators shall be of butt double-strap construction if the diameter of the shell exceeds 36".

e. The longitudinal joints of the shell of pressure tanks for hydraulic elevators may be of lap-riveted construction if the diameter of the shell does not exceed 36", but in such cases the maximum pressure to be allowed on the tank shall be 125 pounds per square inch.

f. The minimum thickness of shell plates shall be as follows:—

DIAMETER OF SHELL.	Minimum Thickness of Shell Plate.
36" or less,	$\frac{5}{16}$ "
Over 36" up to and including 54",	$\frac{3}{8}$ "
Over 54" up to and including 72",	$\frac{7}{16}$ "
Over 72",	$\frac{9}{16}$ "

g. Openings for threaded connections 1" and over, in pressure tanks for hydraulic elevators, shall be reinforced.

h. The minimum thickness of the bumped heads shall be determined in accordance with the formulas for bumped heads in the Air Tank Regulations prescribed by the Massachusetts Board of Boiler Rules. The factor of safety in these formulas shall be 5, and the tensile strength shall be the tensile strength stamped on the plates by the manufacturer, or if not so stamped, shall be taken as 45,000 pounds for wrought iron and 55,000 pounds for steel.

i. When a bumped head has a manhole opening, the thickness, as found by the formulas referred to in Regulation 35*h*, shall be increased by not less than $\frac{1}{8}$ ", and the flange shall be turned inward to a depth not less than three times the thickness of the head.

j. No cast-iron heads or flat-stayed heads shall be used.

k. Pressure tanks for hydraulic elevators, if 30" in diameter or less, shall be provided with two 4" by 6" handholes located one in each head or in the shell as near each head as practicable.

l. Pressure tanks for hydraulic elevators, if over 30" in diameter, shall be provided with an 11" by 15" manhole.

m. Pressure tanks for hydraulic elevators shall be cleaned at least every two years.

n. Every pressure tank for hydraulic elevators shall have a pressure gage connected to the tank by a brass or other non-corrosive pipe, and in such manner that the pressure gage cannot be shut off from the tank, except by a cock with a T or lever handle placed on the pipe near the pressure gage. The dial of the pressure gage shall be graduated to not less than one and one-half times the maximum pressure allowed on the tank.

o. Every tank for hydraulic elevators shall be provided with a $\frac{1}{4}$ " pipe size connection for attaching inspector's test gage when the tank is in service, so that the accuracy of the pressure gage can be ascertained.

p. Pressure tanks for hydraulic elevators shall be tested before being put in use with a hydrostatic pressure 50% in excess of the maximum working pressure for which the tank is constructed.

(The hydrostatic test may be made in the shop of the manufacturer.)

q. Pressure tanks for hydraulic elevators shall be provided with water gage glasses, connected with brass pipe and fittings and indicating the height of the water in the tank.

(The water level in the tank should generally be maintained at about two-thirds of the height of the tank.)

r. All pressure tanks for hydraulic elevators shall be so located and supported that they can be inspected on all sides and ends.

36. *Relief Valves on Hydraulic Elevator Pumps.*

a. Every pump connected with the pressure tank of an hydraulic elevator shall be equipped with a water relief valve of approved make with lifting lever installed so that it cannot be shut off, and of sufficient size to pass the full capacity of pump at full speed at a pump pressure equal to the maximum safe-working pressure for pump and tank. The size of the relief valve shall be not less than one-half the diameter of the discharge opening of the pump. The relief valve may be piped to discharge into the discharge tank or into the pump suction pipe.

37. *Elevator Pump Regulators.*

a. All steam pumps for hydraulic elevators shall be provided and operated with pressure-regulating valves controlling the steam to the pumps, and all electric-driven pumps for hydraulic elevators shall be equipped with automatic pressure-regulating valves controlling the motor, or with automatic by-passes.

Section 4. Cables.

38. *Hoisting Cables.*

a. All car and counterweight hoisting cables, except for dumb-waiters, shall be of iron or steel. Marlin-covered cables shall not be used for the car or counterweight hoisting cables of power passenger elevators.

b. When steel hoisting cables are used for car or counterweight they shall be so designated by a round metal plate not less than 1" in diameter, bearing the words "Steel Cables," and located by the party installing the cables on the cables immediately above the shackles at the point of connection to the car or counterweight.

c. If doubt exists as to the nature of the cables the capacity of the cables shall be limited to capacity of iron cables of the same size.

d. The minimum factor of safety of all car and counterweight hoisting cables, except those of dumb-waiters, shall be 6, based on the suspended load. The ultimate strength of the cables shall be based on the cable manufacturer's lists.

e. All elevator cars and counterweights shall have not less than

two hoisting cables each, except (1) on dumb-waiters and except (2) on hand-power freight elevators having a lifting capacity of 500 pounds or less, and except (3) on the counterweights of freight elevators where the counterweight does not weigh more than 1,400 pounds.

f. No car or counterweight cable, whether new or used, shall be extended or repaired by splicing another piece of cable to it.

g. There shall be not less than one full turn of each car-hoisting cable on the winding drum when the car has reached the lower limit of travel, and not less than one full turn of each counterweight-hoisting cable on the winding drum when the counterweight has reached its lower limit of travel.

h. The drum ends of the car and counterweight hoisting cables shall be secured by clamps or by tapered sockets.

i. The car and counterweight ends of all cables, except that such fastening is not required for the compensating counterweight cables of plunger elevators, shall be fastened by spliced eyes, or by passing through independent tapered and leaded sockets. The length of socket shall be not less than four times the diameter of the rope. The hole at the small end of the socket shall be not more than $\frac{1}{32}$ " larger than the diameter of the rope. After passing through the socket the strands shall be separated and turned into the center, the length of the turned-in portion being not less than two and one-half times the diameter of the rope. The knot shall be drawn tightly into the socket and poured with zinc or babbitt. The socket shall be of drop forging or steel casting, not cast iron, and shall be of sufficient strength to break the cable before the socket gives any indication of distress.

j. Equalizers shall be installed at connections to cars of hoisting cables where practicable, except on traction-type elevators.

39. *Shipper Ropes.*

a. No elevator traveling at a speed exceeding 150' 0" per minute shall be controlled by a hand-operated shipping cable. (See, also, Regulation 60*e*.)

b. No elevator traveling at a speed exceeding 150' 0" per minute, except an hydraulic elevator, shall be controlled by a shipping cable operated by wheel or lever mechanism. (See, also, Regulation 60*f*.)

c. The overhead tension weights of shipping cables shall be equipped with safety chains of not less than No. 7 wire, securely fastened to the weight and to anchorage.

d. Shipper ropes shall be so located as to be inaccessible from landing openings in outside walls of buildings.

e. All shipper ropes on electric elevators shall be insulated from the machines if they are the only means to an electric "ground."

*Section 5. Counterweights.**40. Counterweight Construction.*

a. All counterweights shall have their sections securely bolted or strapped together to keep the individual or subweights in position. All rods passing through the counterweights shall be provided with double nuts, and the ends of the rods, outside of nuts, are to be riveted over or provided with cotter-pins. Car counterweights, when provided, shall be suspended above the machine or drum counterweight.

41. Counterweight Runways and Enclosures.

NOTE. — See Regulation 11 for enclosures around isolated counterweights.

a. The counterweight runs of all elevators, except dumb-waiters and except hatchway-type elevators, shall be enclosed from a height 6" above the bottom of the pit to a height not less than 7' 0" above the bottom of the pit, except where compensating chains would interfere. (See note following Regulation 41c.)

b. The material used for such enclosures in fireproof shafts shall be non-combustible, and in any case, if made of open work, shall be of such design as shall reject a $\frac{1}{2}$ " ball.

c. The counterweight runways of all hatchway-type elevators, except dumb-waiters, shall be boxed in from bottom of the pit to a point as close to the sheaves as practicable. The tops of such enclosures shall be covered except for such openings as may be necessary for the cables.

(The counterweight runways of hatchway-type elevators, if left open for 6" at the bottom, would form a chimney in case of fire in or near the pit. The 6" space at the bottom of counterweight enclosures, as required in Regulation 41a, is to facilitate cleaning.)

d. Where the entire counterweight runway is boxed in there shall be a removable section not less than 2' 0" high and the full width of the boxing, at such a height above the top landing as to just clear the hatchway door when open.

(The removable section is necessary in order to make the counterweight and cables accessible for inspection.)

e. In all cases the lower part of the counterweight enclosure shall be made removable from the top of the counterweight down.

(The removable sections are to make the counterweights and cables accessible for inspection.)

42. Counterweight Stops.

a. There shall be secured at the upper limit of travel of the counterweights of all power elevators an I-beam or other obstruction so that the counterweights cannot be drawn into the overhead sheaves.

43. *Clearance between Counterweights and Shaftways.*

a. There shall be a clearance between all elevator counterweights and the shaftways of not less than $\frac{3}{4}$ ", except for dumb-waiters and except for hand-power elevators. (For clearance between the counterweights and the cars, see Regulation 27.)

Section 6. Guide Rails.

44. *Car-guide Rails.*

a. All guide rails for elevator cars, the speed of which is over 100' 0" per minute, except dumb-waiters, shall be of steel, and shall be fastened securely with iron or steel brackets in such a manner as to sustain the car and its load when the car safeties act.

b. Steel car-guide rails shall weigh not less than 14 pounds per linear foot if the capacity of the elevator is over 1,500 pounds, and not less than 11 pounds per linear foot if the capacity of the elevator is over 1,000 pounds, and not over 1,500 pounds, and not less than 6.5 pounds per linear foot, if the capacity of the elevator is 1,000 pounds or less.

c. Steel car-guide rails shall be tongued and grooved and secured with plates at joints, or the joints otherwise equally secured so as to be free from motion in any direction.

d. Guide strips of wooden car-guide rails shall be not less than $2\frac{3}{4}$ " across the face and not less than $1\frac{1}{2}$ " thick on (1) all power elevators, except dumb-waiters, and (2) on hand-power elevators which have a capacity exceeding 1,500 pounds.

(If safeties are used which grip on the sides of the guide strips, the guide strips may be made not less than $2\frac{1}{4}$ " across the face and not less than $2\frac{1}{4}$ " thick.)

e. Guide strips of wooden car-guide rails shall be not less than $1\frac{3}{4}$ " across the face and not less than $1\frac{1}{4}$ " thick on hand-power elevators having a capacity not exceeding 1,500 pounds, except dumb-waiters.

f. All guide rails for cars and counterweights shall extend to the bottom of the pit and to the overhead beams, and shall be strongly fastened in place.

45. *Counterweight Guide Rails.*

a. All guide rails for counterweights of elevators, the speed of which is over 100' 0" per minute, except dumb-waiters, shall be of steel and shall be fastened and jointed as required in Regulation 44a and 44c for car-guide rails.

b. Steel counterweight guide rails shall weigh not less than 6.5 pounds per linear foot.

c. All counterweights of power elevators shall run in guide rails.

(The boxing in of counterweights shall not be construed as constituting guide rails within the meaning of this Regulation.)

d. All guide rails for cars and counterweights shall extend to the bottom of the pit and to the overhead beams and shall be strongly fastened in place.

46. *Cast-iron Guide Rails.*

a. Cast-iron guide rails shall not be used for elevator cars or counterweights.

47. *Automatic Guide Lubricators.*

a. Automatic guide lubricators shall be installed to lubricate the steel car and counterweight guides of elevators, the speed of which is over 100' 0" per minute.

Section 7. Safety Devices.

48. *Cast Iron in Safety Devices.*

a. No cast iron shall be used on a car as an operating member of a car safety device, except the winding drum of a clamping safety.

49. *Machine Slack Cable Safety Devices.*

a. No cast iron shall be used on a car as an operating member the hoisting cables slacken or break, shall be provided on all winding drum power elevators having a travel of over 15' 0", except dumb-waiters, carriage-type elevators and sidewalk-type elevators.

b. In the case of selective automatic button-control elevators, the slack safety device shall break the car stop-button circuit.

c. Slack cable devices which will stop the elevator machines, if the hoisting cables slacken or break, shall be provided on all winding drum power dumb-waiters having a travel of over 30' 0" and a capacity of over 100 pounds.

50. *Terminal Stops.*

a. All power-driven elevators, except traction-type elevators, and except direct-plunger hydraulic elevators having a travel of 30' 0" or less, and except direct-plunger hydraulic elevators operating on city water pressure, shall be equipped with adjustable, machine automatic terminal stop mechanisms set to stop the machines before the cars or counterweights pass 18" above their upper limits of normal travel, or not exceeding one-half the over-travel space when this space is less than 3' 0".

("Choker-valves" on hydraulic machines are included as machine automatic terminal stop mechanisms.)

b. No chain or rope driven machine automatic terminal stop mechanisms on winding drum type machines shall be allowed, except on dumb-waiters.

c. Direct current traction-type power elevators, running at a

speed in excess of 200' 0" per minute, except dumb-waiters, shall be provided with switches which shall slow down the elevator with not less than two steps and stop it on the third or last step.

d. All elevators of the car-switch or button-control type, except dumb-waiters, shall be equipped with well-limit switches operated respectively by the car and counterweight as they pass their upper limit of normal travel, and arranged to stop the machines before the cars or counterweights pass 18" above the upper limits of normal travel, or not exceeding one-half the over-travel space, where this space is less than 3' 0". A well-limit switch may control, together with the car-control switch or car-control button, a single solenoid switch in the armature circuit only if the armature and brake circuits are positively opened by the machine automatic terminal stop mechanism. A well-limit switch may control, together with the car-control switch or car-control button, two or more solenoid switches, two of which must be closed to complete the armature circuit in each direction of travel. Where a well-limit switch controls the same solenoid switch or solenoid switches as the car-control switch or car-control button, it shall be connected into the control circuit on the opposite side of the magnet windings from the car-control switch or car-control button.

e. All electric elevators operated by two or three phase alternating current shall be provided, in addition to the machine automatic terminal stop mechanism, with means to open automatically the line circuits before the cars or counterweights pass 18" above their upper limits of normal travel, or not exceeding one-half the over-travel space when this space is less than 3' 0".

f. Elevators having shipper-rope control shall be equipped with adjustable ball stops, adjusted to stop the cars within 6" of the upper and lower floor landings.

51. *Automatic Electric Car Switches.*

a. Electric car-control switches shall be so constructed as to return automatically to their off position upon the removal of the hand of the operator.

52. *Slack Cable Safeties on Counterweights.*

a. If a counterweight of any elevator does not run to the lowest floor of a building, and the space below its lowest limit of travel is used for any purpose, the counterweight shall be equipped with a safety device which will stop the counterweight if the cables attached to it should break or become slack. (See Regulation 2b.)

53. *Speed Governors and Slack Cable Safeties.*

a. Speed governors, properly connected by steel cables to the safety devices of the cars in such a manner that the cars shall be

brought to rest with an easy and gradual stop if they attain excessive speed of descent, shall be applied to all power elevators operating at a speed of more than 100' 0" per minute, except direct-plunger elevators, sidewalk-type elevators and dumb-waiters.

b. Either (1) speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the car-hoisting cables become slack or break, or (2) instantaneous safety devices operated by the slackening or breaking of the car-hoisting cables, shall be applied to all power elevators operating at a speed of 100' 0" per minute or less, except belt or chain-driven elevators, direct-plunger elevators, sidewalk-type elevators, carriage-type elevators, hatchway-type elevators, dumb-waiters and sheave suspension vertical cylinder hydraulic elevators.

c. Speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the cables become slack or break, shall be applied to all power elevators of the belt or chain-driven type which operate at a speed of 100' 0" per minute or less and have a travel of more than 40' 0", except sidewalk-type elevators, carriage-type elevators, hatchway-type elevators and dumb-waiters.

d. Speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the cables become slack or break, shall be applied to sheave suspension vertical cylinder hydraulic type elevators operating at a speed of 100' 0" per minute or less and having a travel of over 15' 0".

e. All power passenger elevator cars shall have the safeties specified in Regulation 53a, 53b, 53c and 53d located below the car bottom, so as to insure stopping the car platform.

54. *Electric Brakes.*

a. Electric brakes shall be installed on all direct connected electric elevators, the speed of which exceeds 100' 0" per minute.

b. Every direct current elevator controller operating a brake magnet shall provide a means for handling the shunt winding of the brake magnet in such a way that the brake will not be retarded in its action by motor field discharge or by any counter voltage.

55. *Shipper-rope Locks.*

a. Power freight elevators controlled by shipper ropes, except sidewalk-type elevators and except dumb-waiters, shall be provided with shipper-rope locks, so arranged that the cars can be locked at each landing.

56. *Centering Ropes.*

a. Power freight elevators controlled by shipper ropes, except sidewalk-type elevators and except dumb-waiters, shall be provided, where practicable, with centering ropes or bridles, to stop the cars at any part of their travel. The centering ropes shall be attached to the shipper ropes directly under the upper sheaves.

57. *Warning Chains on Freight Cars.*

a. Warning chains shall be suspended from the car sills of power freight elevator cars, except those of dumb-waiters, hatchway-type elevators and sidewalk-type elevators, and except those with landing doors opening only from the shaftway.

b. The warning chains shall be not less than 30" long, shall be made of No. 0 coil, No. 7 wire gauge, and shall be set not more than 6" on centers, and secured to wood sills or cleats by staples 1" long.

(The chains are required to be attached with 1" staples to wood so that, if caught, they will pull out before causing serious damage.)

58. *Bumpers.*

a. Car bumpers shall be installed in elevator pits so as to leave a clear space of not less than 12" between the floor of the pit and the under side of the car sling when the elevator car rests on the bumpers, except for dumb-waiters, carriage-type elevators and one-story sidewalk-type elevators. (See Regulation 20a.)

b. Car bumpers, of the spring type or the equivalent, shall be installed in the pits of elevators, the speeds of which exceed 150' 0" per minute, except dumb-waiters, and shall be arranged to leave a clear space of not less than 12" between the floor of the pit and the under side of the car sling when the car rests on the fully compressed bumpers.

c. Counterweight bumpers, of the spring type or the equivalent shall be installed to receive elevator counterweights which do not run to the lowest floor of a building, when the space below their lowest limit of travel is used for any purpose. (See, also, Regulation 2c.)

d. Bumpers under an elevator car, the speed of which exceeds 500' 0" per minute, shall be of such design and construction as to absorb, within the limits of the moving parts of the bumpers, all the energy of the car loaded to its full capacity descending at full normal speed.

(Bumpers will absorb the energy of a car or counterweight descending *at normal speed*, when the force in pounds necessary to compress the bumpers multiplied by the distance in inches through which they can be compressed is equal to the weight in pounds of the loaded car multiplied by the height in inches through which it *would have to fall free* in order to attain its normal speed. The heights necessary to attain various normal speeds are given in the table below: —

Heights from which a Body must fall to attain Certain Velocities.

HEIGHTS OF FREE FALL, IN INCHES.	Velocities in Feet per Minute.	HEIGHTS OF FREE FALL, IN INCHES.	Velocities in Feet per Minute.
.129,	50	8.29,	400
.518,	100	10.5,	450
1.17,	150	12.9,	500
2.07,	200	15.7,	550
3.24,	250	18.7,	600
4.66,	300	21.9,	650
6.35,	350	25.4,	700

The following example shows how this table may be used: An elevator car, which with its load weighs 4,000 pounds, has a normal speed of 200' 0" per minute. If two bumpers are used, what must be the force of compression and the distance which they can be compressed?

Solution: By the table, the distance through which the car would have to fall *free* in order to attain a velocity of 200' 0" per minute, is 2.07". $2.07 \times 4,000 = 8,280$. The force in pounds required to compress both bumpers multiplied by the distance in inches through which they can be compressed must equal 8,280. If they can be compressed 6" they must together require a force of $\frac{8280}{6} = 1,380$ pounds to compress them, or 690 pounds each. If they can be compressed 10", they must together require a force of $\frac{8280}{10} = 828$ pounds to compress them, or 414 pounds each.)

59. *Emergency Car Switch.*

a. An emergency switch shall be installed in every elevator car having car-control switch or car-button control.

b. Such emergency switch shall operate to open a main line circuit switch independently of the car control.

c. Such emergency switch shall be connected by a cable independent of the car-control switch cable and of opposite polarity.

Section 8. Capacity and Speed; Change in Use of Elevator.

60. *Capacity and Speed.*

a. The minimum carrying capacity of a power passenger elevator shall be 75 pounds per square foot of car platform area inside of the car enclosure, except a hospital elevator arranged to carry a cot or stretcher, and except a private residence elevator, in which cases the minimum carrying capacity shall be 50 pounds per square foot of car platform area inside of the car enclosure.

b. There shall be a metal capacity plate located by the elevator manufacturer in a conspicuous place in each elevator car, except dumb-waiters, on which plate shall be the word "Capacity" in letters not less than $\frac{1}{4}$ " high, followed by figures and letters not

less than $\frac{1}{4}$ " high, designating the normal rated lifting capacity of the elevator in pounds.

c. The speed of any elevator shall not exceed 500' 0" per minute except that express elevators may be run at a speed not exceeding 700' 0" per minute for that portion of the shaft in which no landing stops are made. Express elevators shall mean only such elevators as run 80' 0" or more without a stop.

d. The speed of carriage-type elevators and of hatchway-type elevators shall not exceed 55' 0" per minute.

e. No elevator traveling at a speed exceeding 150' 0" per minute shall be controlled by a hand-operated shipping cable. (See, also, Regulation 39a.)

f. No elevator traveling at a speed exceeding 150' 0" per minute, except an hydraulic elevator, shall be controlled by a shipping cable operated by wheel or lever mechanism. (See, also, Regulation 39b.)

61. *Change in Use of Elevator.*

a. Before a material change in the use of an elevator is made, the party making such change shall give notice thereof, in writing, to the department having jurisdiction.

(The object of this Regulation is to prevent the improper use of elevators between regular inspections. A material change includes any change that would require a change in the elevator installation, such as the use of a freight elevator for passenger service or for carrying help to and from work, in which case additional safeguards are required, or the use for hoisting automobiles of an elevator originally designed for hoisting carriages, in which case the capacity of the elevator might be exceeded.)

Section 9. Lighting; Signals; Voltage of Control Circuit; Fuse Substitution.

62. *Lighting.*

a. Every passenger elevator car, when in use, shall be properly lighted by an electric or gas light in the car at such times as there is insufficient natural light.

(Gas lighting shall be used only when electricity for lighting is not available in the building.)

b. Every freight elevator car, when in use, except cars of hatchway-type elevators and of dumb-waiters, shall be properly lighted by electricity or gas at such times as there is insufficient natural light. Lights may be located in or adjacent to the shaftways if they light the car properly throughout its entire travel, or the light may be located in the car.

(Gas lighting in the cars shall be used only when electricity for lighting is not available in the building.)

c. There shall be electric or gas lighting at each story near hatchway-type, sidewalk-type and carriage-type elevators, so arranged as

to illuminate the car and its approaches properly. If there is a tight enclosure around the elevator, sufficient lights shall be located inside of the shaftway.

d. Every elevator machine room shall be provided with a suitable electric or gas light which can be lighted without passing over or reaching over any part of the machinery.

63. *Signals.*

a. An annunciator or other signal system, operated from each landing and indicating from which landing the call originates, shall be installed in every passenger elevator car except in private residence elevator cars and except in cars which have no licensed operators.

b. There shall be a bell located in every power freight elevator, or in the shaftway where it may be heard on all floors, and operated by a push button at each landing. This Regulation does not apply to dumb-waiters, to elevators serving only two adjacent stories, nor to elevators equipped with an annunciator or other signal system such as required in Regulation 63a.

(This is intended as a signal device to notify the operator on the car, or on the floor when the car is stopped, that the elevator is wanted on another floor.)

c. Every hatchway-type elevator car where sliding hatch covers are used shall be equipped with a gong which shall ring at least twice as the car passes through each story. The gong shall be plainly audible above the street noises and noises due to machinery or work in the building.

(This Regulation is restricted to the sliding hatch covers because they are comparatively noiseless, whereas the hinged type of hatch covers usually makes sufficient noise to give a reasonable warning of the approach of the car. The gong shall be installed on any type of hatchway elevator if the operation of the hatch covers does not make sufficient noise to give warning of the approach of the car.)

64. *Voltage of Control Circuit and Fuse Substitution.*

a. No difference of potential in excess of 250 volts shall be permitted in any car-switch or button-control circuit.

b. The substitution of wire or other current-carrying device in place of the proper fuses or circuit breaker is prohibited.

DIVISION C. REGULATIONS APPLYING TO EXISTING ELEVATOR INSTALLATIONS.

Section 1. Shaftways.

65. *Thoroughfare under Elevators.*

a. The bottoms of shaftways of elevators and of counterweights shall be kept clear of all materials not necessary to the elevator installation, and shall not be used as thoroughfares or passages.

(The bottom of the shaftway of a hand-power carriage-type elevator is an exception to this Regulation, and may be used as a thoroughfare or passage.)

b. If an elevator or a counterweight does not run to the lowest floor of a building, the space under the bottom of the shaftway of such an elevator or counterweight shall not be used for any purpose unless (1) both elevator car and counterweight are equipped with safety devices which will stop the car and counterweight if the cables attached to them should break or become slack; (2) the construction of the bottom of the shaftway under the car and the counterweight is such as to withstand, without injury, the falling at full normal speed of the car loaded to its capacity and of the counterweight; and (3) bumpers of spring or equivalent type are installed under both car and counterweight when their normal speed exceeds 150' 0" per minute. (See, also, Regulation 109*b*. Data on bumper capacity will be found in Regulation 58*d*.)

c. No hatchway cover shall be used as a thoroughfare or passage unless the elevator is of the sidewalk type. If there is a vertical lifting hatch cover, it shall not be used as a thoroughfare or passage unless there is a clear space above the cover, when at the top of its travel, of not less than 2' 0".

66. *Enclosures or Guards around Shaftways of Carriage-type Elevators.*

a. The sides of floor openings for carriage-type elevators shall be protected by guards not less than 2' 10" above the floor, such as grille work, sheathing, wood or metal double-rail fences, etc., securely fastened in place.

67. *Enclosures around Shaftways of Hatchway-type Elevators.*

a. Enclosures or guards, not less than 3' 4" above the floor, such as grille work, sheathing, wood or metal double-rail fences, etc., securely fastened in place, shall be located around power elevator hatchway openings equipped with automatic hatch covers, except around hatchway openings equipped with vertical lifting hatch covers above which, at the upper limit of their travel, there is a clear space of 2' 0" or more.

b. Similar enclosures or guards shall be placed around the shaftways of power elevators, at the lowest floor which the elevator serves, if the opening in the floor above is protected by a hatch cover.

68. *Enclosures around Elevator Shaftways Outside of Buildings.*

a. The shaftways of elevators located outside of buildings shall be enclosed to a height 7' 0" above the ground with a solid enclosure or with grille work or lattice work which will reject a ball 2" in diameter.

69. *Opening of Standing Portions of Enclosures.*

a. All standing portions of enclosures arranged to open to form larger openings than are obtained at the regular landing doors shall be securely fastened at top and bottom.

70. *Netting on Grille-work Enclosures.*

a. Grille-work, shaftway enclosures, with mesh larger than $\frac{3}{8}$ " square, shall be covered with wire netting of not more than $\frac{3}{8}$ " square mesh, made of wire not smaller than No. 20 gauge, securely attached to grille work (1) where there is less than 4" clearance between the grille work and any portion of the car or of the counterweight, and (2) where a landing door slides by with a clearance of less than 4".

71. *Enclosures around Isolated Counterweights.*

a. Counterweights running in isolated shaftways and not already enclosed shall be enclosed throughout their height with fire-resisting construction or with sheet steel of not less than No. 16 gauge, except where located outside of buildings, in which case solid enclosures not less than 7' 0" high shall be installed.

(Where present enclosures around such counterweights are not solid they shall be covered with wire netting of not larger than $\frac{3}{8}$ " square mesh, made of wire not smaller than No. 20 gauge.)

b. Counterweight enclosures shall be provided with removable sections, not less than 2' 0" high and the full width of the enclosure, located near the top, for the inspection of counterweights and cables.

(Requirements for enclosing counterweights located in the elevator shaftways will be found in Regulation 97.)

72. *Openings and Set-backs in Outside Walls of Freight Elevator Shaftways.*

a. Where the enclosing wall of the shaftway of a power freight elevator is the outside wall of a building, and where the elevator car is open (see Regulation 72e) toward this outside wall, the shaftway side of the outside wall shall be filled in wherever the clearance between the elevator car and the wall is more than 4".

b. The filling-in may be done with any form of construction giving a firm, flush surface if there is no conflict with local building regulations; or it may be done with wooden slats not less than 3" wide by $\frac{7}{8}$ " thick and set vertically not more than 4" apart; or it may be done with metal pipes or bars set vertically not more than 4" apart, provided that such slats, pipes or bars are strongly secured in place with no projections into the shaftway and with all cross bars and other supports, except close-fitting pipe clips, at the back of such slats, pipes or bars.

c. Whatever form of construction is used for filling in, the clearance between the face of the filling-in material and the car shall be not more than 2".

d. All window or other openings or recesses in such outside wall, except the landing door opening, shall be filled in flush or slatted or barred as provided for in Regulation 72*a*, 72*b* and 72*c*, whatever may be the clearance between the elevator car and the wall. The filling-in material shall be made flush with the wall or with the filling-in on the wall, as the case may be. (For exception, see Regulation 72*e*.)

e. If the elevator car is provided on the side adjacent to the outside wall with a gate which closes automatically when the ascending car leaves the landing at which there is an opening in the outside wall, and which is of construction and dimensions specified in Regulation 76*a* and 76*b* for landing gates for openings in outside wall, then the elevator car shall not be considered as open on the side toward the outside wall, and the filling-in of set-backs and openings in such wall shall not be required above the landing opening in the outside wall.

73. *Thresholds and Other Projections.*

a. Substantial bevelled metal or wood plates shall be located under all thresholds, beams and other fixed construction projecting into shaftways 1" or more beyond the general line of the shaftways of the elevator on sides where there are car openings.

(Dumb-waiters are excepted from this Regulation.)

b. The bevelled plates shall extend from the edge of the projection to the vertical wall, and the bevelled surfaces shall make an angle of not less than 60° with the horizontal.

74. *Landing Doors.*

a. All landing openings in solid fire-resisting shaftway enclosures shall be provided with fire-resisting landing doors and frames without open-grille work or movable panels or other openings. Tin-clad doors, rolling steel doors, Kalamein doors, hollow metal fire doors, steel frame doors glazed with wired glass, or doors of other similar construction shall be considered as "fire resisting." Wired glass panels may be used in doors, but shall be subject to the restrictions specified in Regulation 3*a*.

(It is desirable that all such landing doors, which are left open when the car is not at the landing, should be provided with self-closing devices operated by fusible links.)

b. Landing doors for passenger elevators shall slide in a horizontal direction, except that swing doors will be permitted when

equipped and used with an interlocking device, which prevents the starting of the elevator when any landing door is open.

c. Landing doors for all passenger elevators and for freight elevators without landing gates, except dumb-waiters, shall be of such construction and design that when locked they cannot be opened from the landing side without a key, except when the car is at the landing.

(Such landing doors need not be arranged so that they can be opened from the landing side even when the car is at the landing, except in the case of a selective automatic button-control type elevator or a similar elevator where there is no operator.)

d. Landing doors, which cannot be opened from the landing side except by key, shall be arranged to be opened by key at one landing at least.

(The object of this Regulation is to make it possible to close all landing doors when the elevator is shut down and the attendant is absent, thus preventing interference with the elevator by unauthorized persons. It is recommended that all such landing doors be arranged to be opened by key from the landing side to facilitate entrance to the shaftway above and below the car for inspection and repairs and in case of emergency.)

e. Landing doors for selective automatic button-control elevators, except dumb-waiters, are to be self-closing and self-locking and equipped with interlocking devices such that (1) no landing door can be opened unless the car is at the landing, and (2) the car cannot be started unless all the landing doors are closed. Means shall be provided to prevent the starting of the car by the closing of the doors without operating one of the push buttons. (See Regulation 85c.)

(When car-switch control is used in a selective automatic button-control elevator, the interlocking devices shall, nevertheless, remain in operation.)

f. Landing doors for passenger elevators with shipper ropes accessible from the landings when the landing doors are closed shall be self-closing and self-locking and equipped with interlocking devices such that (1) no landing door can be opened unless the car is at the landing, and (2) the car cannot be started unless all landing doors are closed.

g. Landing doors for dumb-waiters, where the bottom of the opening is not less than 18" above the landing floor, may be counter-balanced to stay open, but if the shaftway enclosures are of fire-resisting construction, fusible links are to be located inside of the shaftway, or at the lower edges of the doors, and so connected that upon the melting of the links the doors will close.

h. Landing doors for dumb-waiters, where the bottom of the opening is less than 18" above the landing floor, and the door opening is large enough to be mistaken for a doorway to stairs or to an adjacent room, shall be in two parts, one over the other, the lower of

which shall extend at least 18" above the landing floor and shall be arranged to be opened only after the upper part has been opened, or gates which close when the car leaves the landings shall be installed in addition to the landing doors.

(The upper part of the two-part doors may be counterbalanced to stay open, and if so shall be provided with fusible link as in Regulation 74*g*. The object of making the door in two parts, of which the upper part must be opened first, is to prevent a person from falling down the shaftway. The gate would serve the same purpose.)

i. Dumb-waiters which are under counter-tops at the upper limit of their travel are not required to have landing doors.

75. *Landing Gates, in General.*

a. Freight elevators having shaftway enclosures or guards, except dumb-waiters and except at the bottom landings of sidewalk-type elevators serving only two adjacent stories, shall have all landing openings in such enclosures and guards protected by gates which shall close automatically when the elevator car leaves the landing, except that no such gate shall be required at (1) a landing opening where there is a landing door, or a gate equivalent to a door, which is equipped with an interlocking device such that the door or equivalent gate can be opened only when the car is at the landing, and that the car can be started only when the door or equivalent gate is closed; or (2) at any landing opening of a car operated by a licensed operator and having at all landing openings doors, or gates equivalent to doors, so arranged that they can be opened only from the shaftway side, except by key, and which are always closed before the car leaves the landing.

b. The landing openings in the enclosures or guards around the shaftway at the bottom landing of a sidewalk-type elevator serving only two adjacent stories shall be protected by hand-operated bar, gate or chain if an automatic gate is not installed.

c. The used sides of hatch openings, having hatch covers other than vertical lifting hatch covers, shall be protected by gates which shall close automatically when the car leaves the landing, where necessary to prevent the hatch covers from being used as thoroughfares or passageways.

d. The used sides of hatch openings having vertical lifting hatch covers, above which, at their highest limit of travel, there is less than 2' 0" head room, shall be protected by gates which shall close automatically when the car leaves the landing.

e. Gates may be "full-automatic" or "semi-automatic" or "gravity" gates, but shall close by gravity and not by the direct mechanical action of the car.

(See Regulation 1*l*, 1*m* and 1*n*. Although gates shall not be closed by the direct mechanical action of the car, their speed of closing may be retarded by the direct mechanical action of the car.)

f. Gates are to be made of metal or of hard wood, and are to be strong and rigid and so constructed and installed that they cannot be sprung from their guides. Bar gates hinged at one end shall be of such design and construction as to insure their accurate closing and their rigid support when closed.

g. No gate, when closed, is to be less than 2' 8" in height, measured from the sill to the top of the upper horizontal member of the gate.

h. The lower edge of the lowest horizontal member of any gate, when closed, shall be not more than 3' 4" above the sill.

(Gates extending to the floor are strongly recommended where there is sufficient head room, as they prevent objects from rolling under the gates and falling on the car and its occupants. Double-bar gates are recommended rather than single-bar gates, when there is sufficient head room.)

i. Gate counterweights shall be boxed in or shall run in metal guides from which they cannot be dislodged. The bottoms of the boxes or of the guides shall be of such construction that the counterweights will be securely held if the counterweight ropes should break.

76. *Landing Gates at Openings in Outside Walls.*

NOTE. — Landing openings in outside walls are apt to be left unprotected except by the gates. This is dangerous to the public unless the gates are of such construction as to prevent reaching into the well and to prevent the gates from being opened except when the car is at the landing. Even when such openings are on private ways they are accessible to unauthorized persons, especially children, and the special requirements given below for such gates must be fulfilled.

a. Gates at landing openings in outside walls shall be made (1) solid, without openings, or (2) of such design as will reject a ball 2" in diameter.

b. The top of such a gate, when closed, shall be not less than 6' 0" above the sill, and the bottom shall be not more than 6" above the sill, except that where the landing opening in the outside wall is in the top story of the building the top of the gate need be only 3' 4" high above the sill; and except that an existing gate which fulfills Regulation 76*a*, and is not less than 4' 0" high, need not be replaced by a new gate.

(If it is found to be impracticable to install a gate 6' 0" high without excessive alterations in construction work, a gate as high as practicable may be installed.)

c. All gates at landing openings in outside walls shall be equipped with interlocking devices which will prevent the opening of the gates unless the car is at the landing, and shall be arranged to close and lock automatically when the car leaves the landing. The interlocking mechanism shall be so located and installed, if practicable, that it cannot be reached by hand from outside of the shaftway when the gate is closed.

(If the gate is made solid and fills the whole opening it becomes a door rather than a gate, but must, nevertheless, be equipped with the interlocking and self-closing and self-locking device.)

d. Where the elevator is set back in a vestibule, with the landing opening not actually in the outside wall, but with an opening in the outside wall directly opposite the landing opening and usually left open, thus leaving the landing gate accessible to unauthorized persons, the gate at the landing opening shall be the same as the gates herein specified for openings actually in outside walls.

77. *Landing Gates at Ground Openings of Elevators Outside of Building.*

a. Gates at the ground openings to elevators located outside of building shall be like the gates specified in Regulation 76 for landing gates at openings in outside walls.

78. *Automatic Hatch Covers.*

a. Automatic hatch covers shall be made of not thinner than $\frac{7}{8}$ " stock, strongly battened, if of wood, or of equally strong and stiff metal construction.

b. Wood automatic hatch covers shall be covered on their under sides and on their edges with sheet tin or galvanized steel with locked joints, with nail heads concealed under the joints.

(The existing tin covering need not be replaced, even if the joints are not locked and the nail heads are not concealed.)

c. Hinges on automatic hatch covers shall be either heavy T or heavy strap hinges secured to the floor with lag-screws, or otherwise equally securely fastened and bolted through the hatch covers.

(Existing hinges need not comply with this Regulation unless they are loose or insecure, but when new hinges are installed they must comply with this Regulation.)

d. No hook or other means of fastening hatch covers open shall be permitted.

(The hatch covers may have to be held open temporarily for repairs or testing, but this can be accomplished readily without permanent means for so doing, which might be used habitually, thus eliminating the fire cut-offs for which the hatch covers are installed.)

e. If a sidewalk-type elevator lands within the line of any sidewalk or passageway open to the public, the opening shall be protected by guards not less than 18" high before the elevator is started.

f. Where enclosures are built around the shaftways of hatchway-type elevators, the hatch covers shall not, on that account, be omitted.

79. *Bars at Exterior Windows.*

a. All exterior windows in elevator shaftways shall be protected by vertical metal bars, in accordance with Regulation 19a, 19b and 19c, where (1) there are now no bars, (2) wherever the majority

of the existing bars need repairs, and (3) where there are less than three bars and they are more than 10" on centers.

(This Regulation does not apply to windows located above the platform in the shaftway under the sheaves or machinery.)

b. All such bars, if of iron or steel, shall be kept thoroughly painted.

80. *Platform at Top of Shaftway.*

a. There shall be a platform immediately under the machinery and sheaves, if any, at the top of the shaftway of every elevator except dumb-waiters, hatchway-type elevators and carriage-type elevators.

b. The platform shall fill the shaftway if the latter has a cross-sectional area of fifty square feet or less; otherwise the platform need extend only 2' 0" outside of all sheaves and machinery which should be reached for oiling and inspection.

c. If the platform does not fill the entire shaftway, the edge of the platform shall be protected by a solid baseboard at least 6' high, and where the space between the platform and the wall of the shaft exceeds 12" there shall be a hand rail securely fastened in place 2' 6" above the platform.

d. The platform shall be built and supported for a safe live load of not less than 50 pounds per square foot.

e. If the platform is made of grating there shall be fastened upon the upper side of the grating wire netting of not more than $\frac{3}{8}$ " square mesh and not smaller than No. 20 wire.

f. The platform, if of wood, shall be made solid of not less than 3" plank, except that present wood platforms complying with Regulation 80d need not be replaced.

g. Reasonable access to the sheaves and machinery shall be provided above the level of the platform independent of the elevator car.

Section 2. Cars and Car Enclosures.

81. *Cars.*

a. No elevator car, except a dumb-waiter car, shall have more than one compartment unless an interlocking device is installed such that the car cannot be operated from either compartment unless the car door or car gate of the other compartment is closed.

b. Two cars, balancing each other, and operated by the same machine, shall not be used except for (1) dumb-waiters and (2) freight elevators serving two floors only, of which all the landing openings are protected by gates or doors equipped with interlocking devices such that the cars cannot be operated unless all the landing gates or doors are closed.

c. The car platforms of direct-plunger elevators shall be secured

to heads of the plungers. If the plungers are made in more than three sections the car platforms shall be secured to the bottom heads of the plungers by safety cables run inside of the plungers.

82. *Platform attached to Existing Hoist.*

a. If a platform is attached to an existing hoisting mechanism not previously equipped with a platform, the entire installation shall be considered as a new installation, and shall be subject to all the regulations for such installations. (See Division B.)

83. *Car Enclosures.*

a. Elevator car enclosures or cages shall be secured to the car floors and to the suspension slings in such manner that they cannot work loose or be readily displaced.

b. All passenger elevator cars shall be enclosed on all unused sides and on the top. The enclosures may be of wood or of metal, solid or open work.

(New enclosures installed under this Regulation shall be of such design as will reject a ball 2" in diameter, but existing enclosures need not be changed on account of having larger openings.)

c. The car dome on a power passenger elevator having no gate or door at the opening to the car, or having no interlocking device such that the car cannot be started when any landing door is open, shall be cut back above the door opening, or a section shall be hinged with brass, bronze or composition hinges above the door opening, without locking, to provide an unobstructed space 15" deep from edge of threshold and extending the entire width of the car door opening.

d. All power freight elevator cars, except dumb-waiters and except carriage-type and sidewalk-type elevator cars, shall be enclosed not less than 6' 6" high on all unused sides, or to the cross-heads, where the cross-heads are less than 6' 6" high. The enclosures may be wood or metal, solid or open work, but if open work, the design shall be such as will reject a ball 2" in diameter.

e. Where the enclosure of a power freight elevator car is cut away at the front of the car to make the shipper rope accessible, such opening in the enclosure shall be cut low enough to prevent injury to the hand of the operator, and the lower edge of such opening shall be splayed at an angle of not less than 60° with the horizontal.

f. Where the elevator car enclosure is not solid and the openings are larger than $\frac{3}{8}$ " square, wire netting of not more than $\frac{3}{8}$ " square mesh and not smaller than No. 20 gauge wire shall cover and be securely attached to the car enclosure on the outside where (1) the counterweight passes with a clearance of less than 6" between the

car enclosure and the counterweight, and where (2) there is less than 4" clearance between the car enclosure and any portion of the well construction, except at the front of the enclosure.

g. Covers shall be installed on freight elevator cars except (1) dumb-waiters, (2) hatchway-type elevators, (3) carriage-type elevators, (4) sidewalk-type elevators, (5) elevators where there are automatically closing gates extending down to the floor on all landings above the lowest landing, and (6) all elevators with landing doors which open only from the wellway side and which are kept closed except when the car is at the landing. The covers shall be of wire grille work with a mesh not larger than 1½" by 3" and wire not smaller than No. 9 gauge or of other construction of equivalent strength. The covers shall be set back not more than 6" from the edge of the landing thresholds, and shall be hinged on the landing sides not less than 18" back, so as to fold back should this edge of the cover be obstructed in any manner in its descent.

h. No material, not a part of the elevator equipment, shall be permitted upon the top or cover of any elevator car.

84. *Seats in Cars.*

a. Each passenger elevator, for which a licensed operator is required, shall be provided with a suitable seat for the operator. The seat shall be of folding type, attached to the side of the car, except where the seat is a fixed seat installed for passengers.

85. *Car Gates and Doors.*

a. Each power passenger elevator car shall be equipped with a gate or door at each car door opening unless (1) there is only one door opening, and unless (2) the door opening is 42" or less in width, and unless (3) there is a licensed operator in charge of the car, and unless (4) the car control is so located that the door opening can be protected by the operator when running the car.

(A car door is preferable to a car gate of the folding or collapsible type, as it gives better protection. See Regulation 85h.)

b. The car gate or door at each of the door openings in a power passenger elevator car, having two or more door openings, if not so located that the opening can be properly protected by the operator when running the car, shall be equipped with an interlocking device which shall prevent the operation of the car when either car gate or car door is open.

(The car door at an opening for freight in a passenger elevator car need not have the interlocking device applied if the door is opened only for the occasional handling of freight and is kept locked during the use of the elevator for passenger service.)

c. The gate or door at the door opening of a power passenger elevator car, which is used without a licensed operator, shall be

equipped with an interlocking device which shall prevent the operation of the car unless the car gate or door is closed, except for private residence elevators which are not of the selective automatic button-control type. Means shall be provided to prevent the starting of the car by the closing of the doors without operating one of the push buttons. (See Regulation 74e.)

(In cases of unusual difficulty the enforcement of this Regulation for any except selective automatic button-control elevators is left to the discretion of the inspector having jurisdiction.)

d. Freight-elevator cars used for carrying more than three persons including the operator shall be either (1) enclosed on all sides to the same height as on the unused sides, leaving a door opening 42" or less in width, or (2) equipped with car gates or doors at all car openings.

(If a freight elevator is used at stated hours for carrying employees, portable car gates or doors and enclosures may be employed at the open sides of the car, provided that all such portable construction shall be set in place and secured at all times when the elevator is used for carrying more than three persons including the operator.)

e. The open side away from the building wall of a freight-elevator car located outside of a building shall be protected by a hand-operated or automatic-closing bar or car gate.

f. Automatic-closing car gates on freight elevators, adjacent to the outside walls of buildings, may be substituted for the filling-in of offsets and openings in the outside wall. (See Regulation 72.)

g. Car gates and doors shall, when closed, fill the openings that they protect, except that on freight-elevator cars they need be only as high as the car enclosures, and except where gates of different construction are specifically allowed. (See Regulations 72e and 85e.)

h. New car doors installed on existing cars may be solid or of open work, but shall be of such design as will reject a ball 2" in diameter.

(Collapsible or folding gates may be used on elevator cars, but do not afford the protection of doors as they cannot be made with such small openings.)

Section 3. Machines; Machine Supports; Tanks.

86. Belt and Chain-driven Machines.

a. Belt or chain-driven machines shall not be used for passenger elevators operating at a speed over 100'0" per minute.

b. All elevator belts, except within machine enclosures, which come within 7' 0" of the floor shall be properly guarded.

87. Traveling Sheaves of Vertical Hydraulic Machines.

a. The traveling sheaves of vertical cylinder hydraulic elevators shall be attached with two-part structural steel hangers and not with U straps.

88. *Enclosure of Gears.*

a. All gears operating winding drums, except those of hand-power elevators, shall be enclosed by suitable guards when they are dangerous in the opinion of the inspector having jurisdiction.

89. *Enclosures around Machines.*

a. Elevator machines located on the floor shall be enclosed by solid partitions or grille work not less than 4' 0" high. The mesh or grille work shall be such as to reject a ball 2" in diameter.

90. *Discharge Tanks of Hydraulic Elevators.*

a. The discharge tanks of hydraulic elevators shall be cleaned at least every two years.

b. Such discharge tanks shall be vented so as to be open to atmospheric pressure.

91. *Pressure Tanks for Hydraulic Elevators.*

a. The maximum pressure to be allowed on pressure tanks for hydraulic elevators shall be determined by the formula stated in the Air Tank Regulations prescribed by the Massachusetts Board of Boiler Rules. The factor of safety in the above formula is to be the lowest factor of safety allowed by Regulation 91b. The tensile strength used in the above formula shall, if unknown, be taken as 45,000 pounds for wrought iron and 55,000 pounds for steel.

b. The lowest factor of safety to be used for the pressure tanks for hydraulic elevators shall be 4 if the longitudinal joints are of butt and double-strap construction, and 5 if the longitudinal joints are of lap construction.

c. Pressure tanks for hydraulic elevators shall be cleaned at least every two years.

d. Every pressure tank for hydraulic elevators shall have a pressure gage connected to the tank by a brass or other non-corrosive pipe, and in such a manner that the pressure gage cannot be shut off from the tank, except by a cock with a T or lever handle placed on the pipe near the pressure gage. The dial of the pressure gage shall be graduated to not less than one and one-half times the maximum pressure allowed on the tank.

e. Every tank for hydraulic elevators shall be provided with a $\frac{1}{4}$ " pipe size connection for attaching inspector's test gage when the tank is in service, so that the accuracy of the pressure gage can be ascertained.

f. Pressure tanks for hydraulic elevators shall be provided with water gage glasses, connected with brass pipe and fittings and indicating the height of the water in the tank.

(The water level in the tank should generally be maintained at about two-thirds of the height of the tank.)

92. *Relief Valves on Hydraulic Elevator Pumps.*

a. Every pump connected with the pressure tank of an hydraulic elevator shall be equipped with a water relief valve of approved make with lifting lever installed so that it cannot be shut off, and of sufficient size to pass the full capacity of pump at full speed at a pump pressure equal to the maximum safe-working pressure for pump and tank. The size of the relief valve shall be not less than one-half the diameter of the discharge opening of the pump. The relief valve may be piped to discharge into the discharge tank or into the pump suction pipe.

93. *Elevator Pump Regulators.*

a. All steam pumps for hydraulic elevators shall be provided and operated with pressure-regulating valves controlling the steam to the pumps, and all electric-driven pumps for hydraulic elevators shall be equipped with automatic pressure regulating valves controlling the motor, or with automatic by-passes.

Section 4. Cables.

94. *Hoisting Cables.*

a. All renewals of car and counterweight hoisting cables, except for dumb-waiters, shall be made with iron or steel cables. All existing car and counterweight cables, if not of iron or steel, except for dumb-waiters, shall be renewed within one year of the establishment of these regulations.

b. The minimum factor of safety of all car and counterweight hoisting cables, except those of dumb-waiters, shall be 6, based on the suspended load. The ultimate strength of the cables shall be based on the cable manufacturer's lists.

c. All elevator cars and counterweights shall have not less than two hoisting cables each, except (1) on dumb-waiters and except (2) on hand-power freight elevators having a lifting capacity of 500 pounds or less; and except (3) on the counterweights of freight elevators where the counterweight does not weigh more than 1,400 pounds; and except (4) on the counterweights of elevators where there is only one existing cable; and except (5) on freight elevator cars where there is only one existing cable and the elevator is not used for carrying more than two passengers other than the operator.

d. No car or counterweight cable, whether new or used, shall be extended or repaired by splicing another piece of cable to it.

e. There shall be not less than one full turn of each car-hoisting cable on the winding drum when the car has reached the lower limit of travel, and not less than one full turn of each counterweight-hoisting cable on the winding drum when the counterweight has reached its lower limit of travel.

f. The drum ends of the car and counterweight hoisting cables shall be secured by clamps or by tapered sockets.

g. The car and counterweight ends of all cables replacing existing cables shall be fastened as required for cables in new installations. (See Regulation 38*i* and 38*j*.)

95. *Shipper Ropes.*

a. No elevator traveling at a speed exceeding 150' 0" per minute shall be controlled by a hand-operated shipping cable. (See, also, Regulation 110*c*.)

b. The overhead tension weights of shipping cables shall be equipped with safety chains of not less than No. 7 wire, securely fastened to the weight and to anchorage.

c. All shipper ropes on electric elevators shall be insulated from the machines if they are the only means to an electric "ground."

Section 5. Counterweights.

96. *Counterweight Construction.*

a. All counterweights shall have their sections securely bolted or strapped together to keep the individual or subweights in position. All rods passing through the counterweights shall be provided with double nuts, and the ends of the rods, outside of nuts, are to be riveted over or provided with cotter-pins. Car counterweights, when provided, shall be suspended above the machine or drum counterweight.

97. *Counterweight Runways and Enclosures.*

NOTE. — See Regulation 71 for enclosures around isolated counterweights.

a. The counterweight runs of all elevators, except dumb-waiters and except hatchway-type elevators, shall be enclosed from a height 6" above the bottom of the pit to a height not less than 7' 0" above the bottom of the pit, where there is sufficient clearance, except where compensating chains would interfere. (See note following Regulation 97*c*.)

b. The material used for such enclosures in fireproof shafts shall be non-combustible, and in any case, if made of open work, shall be of such design as shall reject a $\frac{1}{2}$ " ball.

c. The counterweight runways of all hatchway-type elevators, except dumb-waiters, shall be boxed in from bottom of the pit to a point as close to the sheaves as practicable. The tops of such enclosures shall be covered except for such openings as may be necessary for the cables.

(The counterweight runways of hatchway-type elevators, if left open for 6" at the bottom, would form a chimney in case of fire in or near the pit. The 6" space at the bottom of counterweight enclosures, as required in Regulation 97*a*, is to facilitate cleaning.)

d. Where the entire counterweight runway is boxed in there shall be a removable section not less than 2' 0" high and the full width of the boxing, at such a height above the top landing as to just clear the hatchway door when open.

(The removable section is necessary in order to make the counterweight and cables accessible for inspection.)

e. In all cases the lower part of the counterweight enclosure shall be made removable from the top of the counterweight down.

(The removable sections are to make the counterweights and cables accessible for inspection.)

98. *Counterweight Stops.*

a. There shall be secured at the upper limit of travel of the counterweights of all power elevators an I-beam or other obstruction so that the counterweights cannot be drawn into the overhead sheaves.

Section 6. Guide Rails.

99. *Car-guide Rails.*

a. Where wooden car-guide rails are used, the guide strips must be at least $2\frac{3}{4}$ " across the face and not less than $1\frac{1}{2}$ " thick if the elevator is used for more than two passengers other than the operator.

100. *Automatic Guide Lubricators.*

a. Automatic guide lubricators shall be installed to lubricate the steel car and counterweight guides of elevators, the speed of which is over 100' 0" per minute.

Section 7. Safety Devices.

101. *Machine Slack Cable Safety Devices.*

a. Slack cable devices which will stop the elevator machines, if the hoisting cables slacken or break, shall be provided on all winding drum power elevators having a travel of over 15' 0", except dumb-waiters, carriage-type elevators, sidewalk-type elevators, and except freight elevators in which the machines are located above the upper landing and which are not used for carrying more than two passengers other than the operator.

102. *Terminal Stops.*

a. All power-driven elevators, except traction-type elevators, and except direct-plunger hydraulic elevators having a travel of 30' 0" or less, and except direct-plunger hydraulic elevators operating on city water pressure and having a speed of less than 150' 0" per minute, shall be equipped with adjustable, machine automatic ter-

minimal stop mechanisms set to stop the machines before the cars or counterweights pass 18" above their upper limits of normal travel, or not exceeding one-half the over-travel space when this space is less than 3' 0".

("Choker-valves "on hydraulic machines are included as machine automatic terminal stop mechanisms.)

b. No chain or rope driven machine automatic terminal stop mechanisms on winding drum type machines shall be allowed on passenger elevators.

c. Direct current traction-type power elevators, running at a speed in excess of 200' 0" per minute, except dumb-waiters, shall be provided with switches which shall slow down the elevator with not less than two steps and stop it on the third or last step.

d. All elevators of the car-switch or button-control type, except dumb-waiters, shall be equipped with well-limit switches operated respectively by the car and counterweight as they pass their upper limit of normal travel, and arranged to stop the machines before the cars or counterweights pass 18" above the upper limits of normal travel, or not exceeding one-half the over-travel space, where this space is less than 3' 0". A well-limit switch may control, together with the car-control switch or car-control button, a single solenoid switch in the armature circuit only if the armature and brake circuits are positively opened by the machine automatic terminal stop mechanism. A well-limit switch may control, together with the car-control switch or car-control button, two or more solenoid switches, two of which must be closed to complete the armature circuit in each direction of travel. Where a well-limit switch controls the same solenoid switch or solenoid switches as the car-control switch or car-control button, it shall be connected into the control circuit on the opposite side of the magnet windings from the car-control switch or car-control button.

e. All electric elevators operated by two or three phase alternating current shall be provided, in addition to the machine automatic terminal stop mechanism, with means to open automatically the line circuits before the cars or counterweights pass 18" above their upper limits of normal travel, or not exceeding one-half the over-travel space when this space is less than 3' 0".

f. Elevators having shipper-rope control shall be equipped with adjustable ball stops, adjusted to stop the cars within 6" of the upper and lower floor landings.

103. *Automatic Electric Car Switches.*

a. Electric car-control switches shall be so constructed as to return automatically to their off position upon the removal of the hand of the operator.

104. *Slack Cable Safeties on Counterweights.*

a. If a counterweight of any elevator does not run to the lowest floor of a building, and the space below its lowest limit of travel is used for any purpose, the counterweight shall be equipped with a safety device which will stop the counterweight if the cables attached to it should break or become slack. (See Regulation 65b.)

105. *Speed Governors and Slack Cable Safeties.*

a. Speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, shall be applied to all power elevators operating at a speed of more than 100' 0" per minute, except direct-plunger elevators, sidewalk-type elevators and dumb-waiters.

b. Either (1) speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the car-hoisting cables become slack or break, or (2) instantaneous safety devices operated by the slackening or breaking of the car-hoisting cables, shall be applied to all power elevators operating at a speed of 100' 0" per minute or less, except belt or chain-driven elevators, direct-plunger elevators, sidewalk-type elevators, carriage-type elevators, hatchway-type elevators, dumb-waiters and sheave suspension vertical cylinder hydraulic elevators.

c. Speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the cables become slack or break, shall be applied to all power elevators of the belt or chain-driven type which operate at a speed of 60' 0" to 100' 0" per minute, inclusive, and have a travel of more than 40' 0", except sidewalk-type elevators, carriage-type elevators, hatchway-type elevators and dumb-waiters.

d. Speed governors, properly connected to the safety devices of the cars in such a manner that the cars shall be brought to rest if they attain excessive speed of descent, or if the cables become slack or break, shall be applied to sheave suspension vertical cylinder hydraulic type elevators operating at a speed of 100' 0" per minute or less and having a travel of over 15' 0".

106. *Shipper-rope Locks.*

a. Power freight elevators controlled by shipper ropes, except sidewalk-type elevators and except dumb-waiters, shall be provided with shipper-rope locks, so arranged that the cars can be locked at each landing.

107. *Centering Ropes.*

a. Power freight elevators controlled by shipper ropes, except sidewalk-type elevators and except dumb-waiters, shall be provided, where practicable, with centering ropes or bridles, to stop the cars at any part of their travel. The centering ropes shall be attached to the shipper ropes directly under the upper sheaves.

108. *Warning Chains on Freight Cars.*

a. Warning chains shall be suspended from the car sills of power freight elevator cars, except those of dumb-waiters, hatchway-type elevators, sidewalk-type elevators, and except those with landing doors opening only from the shaftway.

b. The warning chains shall be not less than 30" long, shall be made of No. 0 coil, No. 7 wire gauge, and shall be set not more than 6" on centers, and secured to wood sills or cleats by staples 1" long.

(The chains are required to be attached with 1" staples to wood so that, if caught, they will pull out before causing serious damage.)

109. *Bumpers.*

a. Where practicable, car bumpers shall be installed in elevator pits so as to leave a clear space of not less than 12" between the floor of the pit and the under side of the car sling when the elevator car rests on the bumpers, except for dumb-waiters, carriage-type elevators, and one-story sidewalk-type elevators.

b. Counterweight bumpers, of the spring type or the equivalent, shall be installed to receive elevator counterweights, which do not run to the lowest floor of a building, when the space below their lowest limit of travel is used for any purpose. (See, also, Regulation 65b.)

Section 8. Capacity and Speed; Change in Use of Elevator.

110. *Capacity and Speed.*

a. If the capacity of an existing elevator is increased the installation becomes a new installation.

b. If the speed of an existing elevator is increased the installation becomes a new installation.

c. No elevator traveling at a speed exceeding 150' 0" per minute shall be controlled by a hand-operated shipping cable. (See, also, Regulation 95a.)

111. *Change in Use of Elevator.*

a. Before a material change in the use of an elevator is made, the party making such change shall give notice thereof, in writing, to the department having jurisdiction.

(The object of this Regulation is to prevent the improper use of elevators between regular inspections. A material change includes any change that would require a change in the

elevator installation, such as the use of a freight elevator for passenger service or for carrying help to and from work, in which case additional safeguards are required, or the use for hoisting automobiles of an elevator originally designed for hoisting carriages, in which case the capacity of the elevator might be exceeded.)

Section 9. Lighting; Signals; Voltage of Control Circuit; Fuse Substitution.

112. *Lighting.*

a. Every passenger elevator car, when in use, shall be properly lighted by an electric or gas light in the car at such times as there is insufficient natural light.

(Gas lighting shall be used only when electricity for lighting is not available in the building.)

b. Every freight elevator car, when in use, except cars of hatchway-type elevators and of dumb-waiters, shall be properly lighted by electricity or gas at such times as there is insufficient natural light. Lights may be located in or adjacent to the shaftways if they light the car properly throughout its entire travel, or the light may be located in the car.

(Gas lighting in the cars shall be used only when electricity for lighting is not available in the building.)

c. There shall be electric or gas lighting at each story near hatchway-type, sidewalk-type and carriage-type elevators, so arranged as to illuminate the car and its approaches properly. If there is a tight enclosure around the elevator, sufficient lights shall be located inside of the shaftway.

d. Every elevator machine room shall be provided with a suitable electric or gas light which can be lighted without passing over or reaching over any part of the machinery.

113. *Signals.*

a. An annunciator or other signal system, operated from each landing and indicating from which landing the call originates, shall be installed in every passenger elevator car except in private residence elevator cars and except in cars which have no licensed operators.

b. There shall be a bell located in every power freight elevator, or in the shaftway where it may be heard on all floors, and operated by a push button at each landing. This Regulation does not apply to dumb-waiters, to elevators serving only two adjacent stories, nor to elevators equipped with an annunciator or other signal system such as required in Regulation 113a.

(This is intended as a signal device to notify the operator on the car, or on the floor where the car is stopped, that the elevator is wanted on another floor.)

c. Every hatchway-type elevator car where sliding hatch covers are used shall be equipped with a gong which shall ring at least

twice as the car passes through each story. The gong shall be plainly audible above the street noises and noises due to machinery or work in the building.

(This Regulation is restricted to the sliding hatch covers because they are comparatively noiseless, whereas the hinged type of hatch covers usually make sufficient noise to give a reasonable warning of the approach of the car. The gong shall be installed on any type of hatchway elevator if the operation of the hatch covers does not make sufficient noise to give warning of the approach of the car.)

114. *Voltage of Control Circuit and Fuse Substitution.*

a. No difference of potential in excess of 250 volts shall be permitted in any car-switch or button-control circuit.

b. The substitution of wire or other current-carrying device in place of the proper fuses or circuit breaker is prohibited.

DIVISION D. REGULATIONS APPLYING TO BUILDERS' ELEVATORS AND TO TEMPORARY USE OF PERMANENT ELEVATORS.

Section 1. Builders' Elevators.

NOTE. — Regulations other than Regulations 115 and 116 do not apply to builders' elevators.

115. *Inspection.*

a. No builder's elevator shall be put in use until notice has been given to the department or inspector having jurisdiction, after which its use shall be subject to the approval of such department or inspector.

116. *Slack Cable Safety and Protection of Openings.*

a. Builders' elevators used during the construction of buildings or other structures shall be equipped with safety devices which shall bring the cars to rest if the hoisting cables should become slack or should break.

b. Each landing opening of all such elevators shall be protected by movable bar or bars about 3' 4" high, or the equivalent.

c. Each floor opening of all such elevators shall be protected by a fixed enclosure, fence or guard on the unused sides, at least 5' 0" high.

Section 2. Temporary Use of Permanent Elevators.

NOTE. — See Regulation 126d regarding operation.

117. *Use Subject to Approval of Inspector.*

a. An elevator installed for permanent use may be used temporarily before completion during the construction of the building for carrying workmen and materials, subject to the approval of the inspector having jurisdiction.

118. *Car Enclosures.*

a. Temporary cars on permanent installations, and permanent cars when put into temporary use, shall be enclosed on all sides, except the landing sides, at least 5' 0" high, and shall be provided with suitable covers to protect persons on the car from falling materials.

119. *Slack Cable Safety.*

a. All permanent elevators so temporarily used shall be equipped with safety devices which shall bring the cars to rest if the hoisting cables should become slack or should break.

120. *Protection of Openings.*

a. Each landing opening of all such elevators shall be protected by a hinged bar or by a gate about 3' 4" in height, unless the permanent gates or landing doors are installed.

b. The unused sides of the shaftway shall be protected by suitable enclosures not less than 5' 0" high.

121. *Operator.*

a. No such elevator car shall be used temporarily unless in charge of a competent operator.

DIVISION E. REGULATIONS APPLYING TO OPERATION OF ELEVATORS.

122. *Licensed Operators.*

a. No person shall operate and no owner, lessee, employer or his agent shall cause or permit to be operated the elevators specified in b, c and d of this Regulation to be operated by licensed operators, unless the person operating the same is duly licensed: *provided, however*, that in case of emergency such operation by a competent unlicensed person may be permitted for a period not exceeding seven consecutive days.

b. Power passenger elevators shall be operated by licensed operators, except (1) the selective automatic push-button type when equipped with the required safeguards (see Regulations 14f, 26c, 74e and 85c); and except (2) elevators with shipper ropes accessible from the landings, when equipped with the required safeguards (see Regulations 14g, 26c, 74f and 85c); and except (3) a passenger elevator in a private residence occupied by one family; and except (4) a passenger elevator serving two landings only when such elevator is equipped with the door interlocking devices required on a selective automatic button-control elevator.

c. Power freight elevators shall be operated by licensed operators if the elevators run at a speed exceeding 100' 0" per minute.

d. Power freight elevators, except hatchway-type, carriage-type,

sidewalk-type and dumb-waiters, and except elevators serving only two landings, shall be operated by licensed operators whenever (1) they are used for carrying more than three persons, including the operator, or whenever (2) they are not provided with landing gates. (See Regulations 15a and 75a.)

e. Licensed operators are not required for elevators used in uncompleted buildings for hoisting workmen and materials.

f. A license shall not be required of an elevator contractor or of a mechanic engaged in the construction and repair of elevators, or of an inspector having authority to inspect elevators.

123. *Granting of Licenses.*

a. Whoever desires to act as an operator of elevators herein required to be operated by a licensed person shall make application to the department having jurisdiction of elevators in the city or town, on blanks to be furnished by the said department. An application shall be properly filled in and shall be accompanied by a written recommendation from the owner, occupant or lessee of the building in which the elevator or elevators to be operated are located, or by two citizens acceptable to the department. A license shall not be granted to a person less than eighteen years of age.

b. The applicant shall be given a practical examination as to his knowledge of the operation of elevators, particularly as to the safeguarding of passengers, by an inspector having jurisdiction, and if found competent shall be granted a license by the executive head of the department. Such executive head may, however, delegate the power to grant licenses to any inspector of the department having jurisdiction.

c. All licenses shall be for the term of one year from the date thereof, but may be renewed yearly by the department having jurisdiction. Licenses in force when these regulations become effective shall remain valid until the term for which they were issued has expired.

d. It shall be optional with any department granting licenses, whether or not a license granted by another department shall be accepted without an examination of the licensee. Such acceptance shall be indicated by the indorsement, across the face of the license, of the inspector having jurisdiction. If the inspector having jurisdiction will not accept by indorsement a license from another department, he may grant a new license with or without examination.

e. Should an operator lose his license, he shall be granted a duplicate thereof upon application to the department granting the original license. Such application shall state fully all particulars relative to the granting and loss of the license, and the applicant shall make oath to the statements contained in his application.

f. The fee for a new license shall be one dollar; the fee for a duplicate license shall be fifty cents; the fee for a transfer or issuance of a license by one department upon the presentation of a license from another department shall be fifty cents; and the fee for the renewal of a license shall be fifty cents.

g. All fees shall be payable upon the granting of the respective licenses, and shall accrue to the appropriation of the department granting the licenses, except as otherwise provided by law or ordinance.

h. The applications and a record of the licenses issued by each department shall be kept by such department.

124. *Revocation and Suspension of Licenses.*

a. A wilful falsification in the matter of a statement in an application shall be deemed sufficient cause for the revocation at any time of a license granted on said application.

b. A license may be revoked by an inspector having jurisdiction if the holder is incompetent or untrustworthy, or may be suspended for a period not exceeding fourteen days for negligence.

125. *Display of Licenses.*

a. A licensed operator shall at all times when operating an elevator have in his possession his license card, and shall display the same on demand of the owner or occupant of the building, or of any person authorized to inspect the elevator, or of any police officer.

126. *Designated Operators.*

a. If it appears to an inspector having jurisdiction that an elevator not required by these Regulations to be operated by a licensed operator is being operated without due regard to safety, he may require the owner, occupant, occupants or lessee to designate one or more reliable persons to operate the said elevator, subject to the approval, in writing, of the head of the department having jurisdiction.

b. The names of such person or persons so designated shall be made a matter of record by the inspector having jurisdiction, and shall be posted in proper form on the elevator or elevators in question. After being so posted the said elevator or elevators shall not be operated by a person who has not been designated as provided herein, until such time as the requirement for such designated operator has been removed by the department or inspector which made it.

c. No person, except by authority of the inspector having jurisdiction, shall alter, deface or remove, or cause to be altered, defaced or removed, a designating card.

d. Permanent elevators used temporarily, before the completion of a building, for carrying workmen and materials shall be operated by "designated operators."

e. A licensed operator shall be permitted to operate any elevator requiring a "designated operator."

127. *Closing of Doors and Gates.*

a. All operators shall close the landing door, if there is no automatic landing gate, before starting the elevator.

b. All operators shall keep passengers far enough from the car opening to protect them and shall keep the car door or car gate closed, if there is one, while the car is in motion.

128. *Locking of Shipper Ropes.*

a. All shipper ropes shall be locked by the operator when the cars are being loaded or unloaded.

DIVISION F. REGULATIONS APPLYING TO NEW ESCALATOR INSTALLATIONS.

129. *Drive.*

a. Each ascending escalator shall be driven by an independent electric motor.

130. *Speed.*

a. Escalators of the "stair-tread" type shall operate at a speed not exceeding 95' 0" per minute.

b. Escalators of the "cleat" type shall operate at a speed not exceeding 120' 0" per minute.

131. *Hand Rails.*

a. All escalators shall be equipped on both sides with moving hand rails operating at the speed of the escalator and in the same direction of travel.

132. *Electric Brake.*

a. Every escalator shall have on the driving mechanism an electric brake which shall automatically and immediately stop the escalator when the motor circuit is opened.

133. *Emergency Stops.*

a. There shall be a button or other type switch located in a conspicuous position at the top and at the bottom of each escalator. The operation of the button or switch shall cause the opening of the

line circuit, stopping the motor and applying the brake. Each button or switch shall be plainly marked "Escalator Stop Button" or "Escalator Stop Switch," as the case may be. If a glass front is placed over the button or switch, the operation of such button or switch shall be caused automatically by the breaking of the glass, and suitable means for breaking the glass, such as a hammer, shall be chained or otherwise securely fastened conveniently near by.

134. *Safety Devices.*

a. All ascending escalators, the moving treads of which are operated by chains, shall be equipped with safety dogs or pawls, applied to the ascending portion of the escalator, which shall prevent the descending travel of this portion of the escalator, should the driving mechanism or any portion of the escalator platform break. There shall be one dog or pawl near the top of the ascending portion of the escalator platform exposed for carrying passengers and one near the bottom of this platform, and there shall be dogs or pawls located in intermediate positions such that the maximum distance between pawls measured along the escalator incline shall not exceed 30' 0".

b. Ascending escalators operated by rack type links shall be provided with safety dogs as above specified, or with safety mechanisms at or near the lowest passenger level and operating on the ascending links, which will prevent reverse travel of the escalator.

c. The framework forming the support for the escalator mechanism at its lower end shall be of sufficient strength to safely retain the escalator platform should it break at any portion of its length.

d. The guides and the top and bottom framing supports of the escalator shall be so constructed that should the escalator platform break at any portion of its length it shall not be displaced from its guides.

135. *Links and Chains.*

a. Rack type links, when used to drive the escalator treads, shall be of annealed steel castings of not less than 80,000 pounds per square inch tensile strength, and shall be provided with friction-bearing surface on the back not less than 1" wide extending the full length of the links. The factor of safety shall not be less than 20.

b. Where chains are used to operate the treads they shall be constructed of metal of tensile strength of not less than 60,000 pounds per square inch, and the factor of safety shall be not less than 10.

136. *Angle of Inclination.*

a. The angle of inclination of an escalator shall not exceed 30° above the horizontal.

137. *Sides.*

a. Each escalator shall be enclosed on each side from the hand rail to the escalator treads or skirt guard rail. These enclosures shall, on the escalator side, be smooth, without depressed or raised panelling or moulding. There shall be no jogs or abrupt changes in width between the enclosing sides. Should any change in width be necessary the enclosing sides shall be moulded to such change in width at an angle not greater than 15° from the line of escalator travel.

DIVISION G. REGULATIONS APPLYING TO EXISTING ESCALATOR INSTALLATIONS.

138. *Speed.*

a. The speed of escalators of the "stair-tread" type shall not be increased to exceed 95' 0" per minute, but the escalators of this type now operating at a higher speed need not be reduced in speed.

b. Escalators of the "cleat type" shall operate at a speed not exceeding 120' 0" per minute.

139. *Hand Rails.*

a. All escalators shall be equipped on both sides with moving hand rails operating at the speed of the escalator and in the same direction of travel.

140. *Emergency Stops.*

a. There shall be a button or other type switch located in a conspicuous position at the top and at the bottom of each escalator. The operation of the button or switch shall cause the opening of the line circuit, stopping the motor. Each button or switch shall be plainly marked "Escalator Stop Button" or "Escalator Stop Switch," as the case may be. If a glass front is placed over the button or switch the operation of such button or switch shall be caused automatically by the breaking of the glass, and suitable means for breaking the glass, such as a hammer, shall be chained or otherwise securely fastened conveniently near by.

141. *Safety Devices.*

a. All ascending escalators, the moving treads of which are operated by chains, shall be equipped with safety dogs or pawls, applied to the ascending portion of the escalator, which shall prevent the descending travel of this portion of the escalator, should the driving mechanism or any portion of the escalator platform break. There shall be one dog or pawl near the top of the ascending portion of the escalator platform exposed for carrying passengers

and one near the bottom of this platform, and there shall be dogs or pawls located in intermediate positions such that the maximum distance between pawls measured along the escalator incline shall not exceed 30' 0".

b. The framework forming the support for the escalator mechanism at its lower end shall be of sufficient strength to safely retain the escalator platform should it break at any portion of its length.

GIFFORD LE CLEAR, *Chairman*,
ANGUS H. McDONALD,
ARTHUR G. EVERETT,
ROBERT H. MITCHELL,
CLIFFORD J. STODDARD,
MARTIN B. McLAUTHLIN,
JOHN C. MACDONALD,
Board of Elevator Regulations.

Approved in Council, May 20, 1914.

(Signed) E. F. HAMLIN,
Executive Secretary.

STATUTES ENACTED DURING THE YEAR, THE PROVISIONS OF WHICH ARE ENFORCED BY OR RELATE TO THE DISTRICT POLICE FORCE.

CHAPTER 126.

AN ACT RELATIVE TO FALSE IMPRISONMENT OR FALSE ARREST.

SECTION 1. No action, except for use of excessive force, shall hereafter lie against any officer other than the arresting officer, by reason of the fact that, in good faith and in the performance of his duties, he participates in the arrest or imprisonment of any person believed to be guilty of a crime or misdemeanor, unless it can be shown that such other officer in the performance of his duties took an active part in the arrest or imprisonment as aforesaid, either by ordering or directing that said arrest or imprisonment take place or be made, or by himself actually initiating the making and carrying out of said arrest and imprisonment. No action, except for use of excessive force, shall lie against any by-stander who assists an officer in making an arrest, at the request of the officer.

SECTION 2. This act shall take effect upon its passage.

CHAPTER 155.

AN ACT RELATIVE TO THE GIVING OF BONDS IN BLASTING OPERATIONS.

SECTION 1. Section one of chapter three hundred and twenty-five of the acts of the year nineteen hundred and eleven is hereby amended by inserting at the end of the first sentence the following:—*provided, however*, that the chief of the district police or the official granting the permits may determine a single and blanket bond in a penal sum not exceeding fifteen thousand dollars to be sufficient to cover the risk of damage from all blasting operations of the applicant, either under the permit so issued, or under future permits to use explosives in blasting operations,—so as to read as follows:—*Section 1.* Before the issue of a permit to use an explosive in the blasting of rock or any other substance as prescribed by the detective and fire inspection department of the district police, the applicant for the permit shall file with the clerk of the city or town in which the blasting is to be done, a bond running to the city or town with a surety or sureties approved by the treasurer thereof, for such penal sum not exceeding ten thousand dollars as the chief of the district police or the official granting the permit shall determine to be necessary in order to cover the risk or damage that might ensue from the blasting: *provided, however*, that the chief of the district police or the official granting the permits may determine a single and blanket bond in a penal sum not exceeding fifteen thousand dollars to be sufficient to cover the risk of damage from all

blasting operations of the applicant, either under the permit so issued, or under future permits to use explosives in blasting operations. The bond shall be conditioned upon the payment of any loss, damage or injury resulting to persons or property by reason of the use or keeping of said explosive.

SECTION 2. This act shall take effect upon its passage.

CHAPTER 196.

AN ACT RELATIVE TO THE USE OF THE CINEMATOGRAPH AND SIMILAR APPARATUS IN ARMORIES AND OTHER PLACES OCCUPIED BY THE MILITIA.

SECTION 1. An officer or enlisted man of the volunteer militia who has been duly licensed in accordance with section four of chapter five hundred and sixty-six of the acts of the year nineteen hundred and eight, as affected by section two of chapter two hundred and eighty-one of the acts of the year nineteen hundred and nine and by chapter one hundred and eighty-two of the acts of the year nineteen hundred and twelve, may, in any armory or other place permanently occupied by the commonwealth for military purposes, operate any cinematograph or similar apparatus which is owned or controlled by the commonwealth, without obtaining the special license required by chapter four hundred and forty of the acts of the year nineteen hundred and eleven or by chapter two hundred and eighty of the acts of the year nineteen hundred and thirteen: *provided, however*, that all other laws of the commonwealth and the regulations of the district police relating to the use of the cinematograph or similar apparatus shall be complied with.

SECTION 2. This act shall take effect upon its passage.

CHAPTER 421.

AN ACT TO AUTHORIZE THE EMPLOYMENT OF EXPERT ASSISTANCE IN THE ENFORCEMENT OF STATUTES RELATIVE TO EXPLOSIVES AND INFLAMMABLE FLUIDS AND COMPOUNDS.

SECTION 1. There shall annually be allowed and paid out of the treasury of the commonwealth a sum not exceeding twenty-five hundred dollars, to be expended by the chief of the district police for the employment of expert assistance to aid in the enforcement of the statutes relative to explosives and inflammable fluids and compounds.

SECTION 2. This act shall take effect upon its passage.

CHAPTER 451.

AN ACT RELATIVE TO THE OPERATION OF BOILERS IN APARTMENT HOUSES.

Section seventy-eight of chapter one hundred and two of the Revised Laws, as amended by section one of chapter three hundred and seventy-three of the acts of the year nineteen hundred and seven

and by section one of chapter five hundred and sixty-two of the acts of the year nineteen hundred and eleven, is hereby further amended by striking out the word "flats", in the fifth line, and inserting in place thereof the word:—apartments,—so as to read as follows:—*Section 78.* No person shall have charge of or operate a steam boiler or engine in this commonwealth, except boilers and engines upon locomotives, motor road vehicles, boilers and engines in private residences, boilers in apartment houses of less than five apartments, boilers and engines under the jurisdiction of the United States, boilers and engines used for agricultural purposes exclusively, boilers and engines of less than nine horse power, and boilers used for heating purposes exclusively which are provided with a device approved by the chief of the district police limiting the pressure carried to fifteen pounds to the square inch, unless he holds a license as herein-after provided. The owner or user of a steam boiler or engine, other than boilers or engines above excepted, shall not operate or cause to be operated a steam boiler or engine for a period of more than one week, unless the person in charge of and operating it is duly licensed.

CHAPTER 467.

AN ACT RELATIVE TO SAFETY VALVES AS APPLIED TO AMMONIA COMPRESSORS.

SECTION 1. It shall be unlawful to use an ammonia compressor unless it is equipped with a safety valve.

SECTION 2. The board of boiler rules shall within ninety days after the passage of this act formulate rules for the size, design, location and piping of safety valves on ammonia compressors.

SECTION 3. The rules so formulated shall have the force of law and shall be printed and furnished to those requesting them by the boiler inspection department.

SECTION 4. Any changes in the rules as formulated by the board of boiler rules shall be made in accordance with section twenty-six of chapter four hundred and sixty-five of the acts of the year nineteen hundred and seven, as amended by section two of chapter three hundred and ninety-three of the acts of the year nineteen hundred and nine.

SECTION 5. The provisions of this act shall be enforced by the boiler inspection department of the district police, and all persons, firms or corporations violating the provisions of this act shall be punished in accordance with section eighty-six of chapter one hundred and two of the Revised Laws as amended by section three of chapter three hundred and ten of the acts of the year nineteen hundred and five.

CHAPTER 521.

AN ACT RELATIVE TO REWARDS FOR THE DETENTION, ARREST AND CONVICTION OF PERSONS WHO HAVE COMMITTED A FELONY.

Section nine of chapter two hundred and seventeen of the Revised Laws is hereby amended by striking out all after the word "crime", in the eighth line, and inserting in place thereof the following:— or for information that shall lead to the arrest and conviction of any person who has committed a felony, if the person cannot be arrested and secured in the common course of proceedings. If more than one claimant applies for the payment of such reward, the governor shall determine to whom it shall be paid, and if to more than one person, in what proportion to each, and his determination shall be final.— so as to read as follows:— *Section 9.* The governor, if in his opinion the public good so requires, may offer a suitable reward of not more than one thousand dollars in any one case to be paid by the commonwealth to any person who, in consequence of such offer, apprehends, brings back and secures a person who is convicted of or charged with a felony, who has escaped from prison in this commonwealth, or to any person who in consequence of such offer apprehends and secures a person charged with such crime, or for information that shall lead to the arrest and conviction of any person who has committed a felony, if the person cannot be arrested and secured in the common course of proceedings. If more than one claimant applies for the payment of such reward, the governor shall determine to whom it shall be paid, and if to more than one person, in what proportion to each, and his determination shall be final.

CHAPTER 577.

AN ACT TO INCREASE THE FACILITIES OF THE DISTRICT POLICE FOR THE ENFORCEMENT OF LAW AND PREVENTION OF CRIME IN THE WATERS OF THE COMMONWEALTH.

SECTION 1. The chief of the district police is hereby authorized to expend, under the direction of the governor and council, a sum not exceeding twelve thousand dollars, to purchase and maintain a boat to be used in the enforcement of law and the prevention of crime in the waters of the commonwealth.

SECTION 2. The governor is hereby authorized to appoint one additional member of the district police who shall be employed as a detective in the detective department of the district police and who may be detailed for duty in the enforcement of law and the prevention of crime in the waters of the commonwealth. His term of office, salary, powers and duties shall be the same as those provided by law for the district police. The said appointment may

be made without giving to veterans the preference required by sections twenty-one and twenty-two of chapter nineteen of the Revised Laws.

SECTION 3. This act shall take effect upon its passage.

CHAPTER 622.

AN ACT RELATIVE TO THE EMPLOYMENT OF A STOREKEEPER IN THE DEPARTMENT OF THE DISTRICT POLICE.

SECTION 1. The chief of the district police is hereby authorized to employ a storekeeper in his department at an annual salary of seven hundred and fifty dollars, to increase by yearly increments of fifty dollars until it reaches the sum of nine hundred dollars: *provided*, that such increase is approved, from year to year, by the chief of the district police for the efficiency and faithfulness of such storekeeper; and *further provided*, that the present employee performing the duties of storekeeper shall receive an annual salary of nine hundred dollars during his occupancy of said position.

SECTION 2. This act shall take effect upon its passage.

CHAPTER 649.

AN ACT RELATIVE TO THE CONSTRUCTION AND INSPECTION OF TANKS CONTAINING COMPRESSED AIR FOR USE IN OPERATING PNEUMATIC MACHINERY.

SECTION 1. No person shall install or use, or cause to be installed or used, any tank or other receptacle, except pipes laid from tanks or other receptacles, for the keeping or storing of compressed air at any pressure exceeding fifty pounds per square inch, for use in operating pneumatic machinery, unless the owner or user thereof shall hold a certificate of inspection issued by the boiler inspection department of the district police, certifying that the said tank or other receptacle has duly been inspected within two years, or unless the owner or user shall hold a policy of insurance upon the said tank or other receptacle issued by an insurance company operating under the laws of this commonwealth, together with a certificate of inspection from an insurance inspector who holds a certificate of competency as a boiler inspector issued by the boiler inspection department of the district police.

SECTION 2. The board of boiler rules shall prescribe regulations for the size, shape, construction, gauges, operation, maximum pressure, safety devices, use of oil, and other appurtenances necessary for the safe operation of all tanks or other receptacles used for the storing of compressed air, except those exempted by section seven of this act.

SECTION 3. The boiler inspection department of the district po-

lice shall inspect all of the said tanks or other receptacles having a pressure in excess of fifty pounds per square inch, at least once every two years: *provided, however*, that the said department shall not be required to inspect such tanks or other receptacles as may be covered by a policy of insurance and inspected by insurance inspectors as specified in section one.

SECTION 4. All owners of any of the said tanks or other receptacles having a pressure in excess of fifty pounds per square inch shall notify the chief of the district police of the location of the same.

SECTION 5. Every insurance company authorized to insure air tanks within this commonwealth shall forward to the chief of the district police, within fourteen days after each internal and external inspection of an air tank or other such receptacle, a report of such inspection. The reports shall be made on blanks furnished by the chief of the district police, and shall contain all orders and regulations made by the company regarding the air tanks or other receptacles so inspected.

SECTION 6. The inspection shall consist of a hammer test, and, if required by the inspector, also a hydrostatic test the pressure of which shall be one and one half times the pressure allowed on the air tank or other receptacle inspected. The air tank or other receptacle shall be prepared for inspection by the owner or user thereof.

SECTION 7. The provisions of this act shall not apply to tanks or other receptacles used for the keeping or storing of compressed air when attached to locomotives, street or railway cars, vessels or motor vehicles.

SECTION 8. The sum of three dollars shall be paid to the boiler inspection department of the district police by the owner, agent or user of any such tank or other receptacle for every inspection thereof by the said department, herein provided for.

SECTION 9. Whoever violates any provision of this act, or any regulation made under authority hereof, shall be punished by a fine not exceeding fifty dollars, or by imprisonment for not more than thirty days, or by both such fine and imprisonment.

SECTION 10. Chapter six hundred and twenty-nine of the acts of the year nineteen hundred and thirteen and chapter one hundred and twenty-seven of the acts of the present year are hereby repealed.

SECTION 11. This act shall take effect upon its passage.

Chapter 791, relative to the operation of the cinematograph and the exhibition of motion pictures, is given on page 31 of this report.

DETECTIVE DEPARTMENT.

GEORGE C. NEAL, *Deputy Chief.*

DETECTIVE DEPARTMENT.

REPORT OF GEORGE C. NEAL, *Deputy Chief*.
OFFICE, 1 STATE HOUSE, BOSTON.

To the Chief of the District Police.

SIR: — The members of this department are divided into two branches, consisting of sixteen detectives and twelve fire inspectors, but each member is fully qualified by special training and experience to efficiently perform any of the various duties assigned to this department, and must at all times be ready to cope with any class of crime.

The principal duty of the detective officers is to enforce the criminal laws of the Commonwealth. They are assigned to districts, and for the most part they work under the direction of the district attorneys of their respective districts. They investigate all information obtained from any source relative to crimes committed, or liable to be committed; they locate and arrest criminals; prepare cases for the grand jury and courts, locating witnesses and securing their attendance, and perform other duties in connection with the preparation of cases for trial. The greater part of their work is of a confidential nature, and is, therefore, known only to the district attorneys and themselves. That they have performed their various duties satisfactorily is evidenced by the expressions of approval received from the various officials of the Commonwealth with whom they have been brought into contact during the performance of such duties.

The principal duty of the fire inspectors is the investigation of fires occurring within the cities and towns of the Commonwealth, to ascertain, in so far as possible, whether or not the causes of such fires have been incendiary or sus-

picious. In complying with the provisions of law governing the investigation of fires, it is their duty to investigate every fire occurring in the city of Boston from whatever cause, and to investigate every fire of a suspicious character occurring in the cities and towns outside of Boston. Wherever, from the result of such investigation, there has been found reason to suspect that fires have occurred from criminal intent, hearings have been held and the necessary action taken to bring the guilty parties to justice. During the year ending Oct. 31, 1914, 5,074 fires have been investigated to ascertain the causes, and 46 persons have been prosecuted in consequence of the results of such investigations.

During the past year, as in previous years, it has been found necessary to detail detective officers to assist in the investigations of fires, owing to the large number of fires reported and the limited number of fire inspectors to properly carry out the investigations. The entire time of one detective, and the greater portion of the time of another, has been taken up in the performance of police duty for certain State officials, upon their request, principally the Attorney-General's department, the Insurance Commissioner's department and the Board of Registration in Medicine.

In addition to the duties performed by the officers in their respective branches of this department as herein outlined, each member of the department has also been employed, to more or less extent, in supervising the enforcement of the law relative to the keeping, storage, use, manufacture, sale, etc., of explosives, inflammable fluids and compounds, fireworks and firecrackers, the duty of enforcing such provisions having been imposed upon this department by the provisions of chapter 370, Acts of 1904, and subsequent legislation.

During the year, and in compliance with the provisions of the statutes referred to, regulations have been issued as follows: governing the construction and maintenance of garages; governing the manufacture, storage and keeping for sale of inflammable compounds; governing dry cleaning, dry dyeing and sponging establishments; and governing the keeping, storage and use of celluloid.¹

¹ These regulations will be found on pages 71 to 99 of this report.

The necessity for the employment of expert assistance in the enforcement of the laws and regulations relative to explosives and inflammable fluids and compounds has become more and more apparent each year, and the services of Mr. Walter L. Wedger, who was appointed by you to the position of expert chemist on May 20, 1912, have proved not only necessary but also satisfactory and efficient.

In connection with his employment it has been found necessary to provide a laboratory for his use, and a room has been rented and fitted up for such purpose in the Newbury Building, Boston. A report of the duties performed by Mr. Wedger during the twelve months ending Oct. 31, 1914, will be found on page 205 of this report.

It is impossible to present in tabulated form a full statement of the work performed by this department, as a very large part of such work is connected with cases where it has been found impossible to secure sufficient evidence to convict, and the work must necessarily remain secret. Reference to the individual reports of the officers which follow will show that a large amount of very important work has been performed during the year by them in procuring, and assisting other officers of local departments to procure, evidence in many cases of murder, burglary, forgery and larceny, and the conviction and sentencing of those guilty of such crimes.

SUMMARY OF THE DUTIES PERFORMED BY THE DETECTIVE AND FIRE
INSPECTION DEPARTMENT OF THE DISTRICT POLICE DURING THE
YEAR ENDING OCT. 31, 1914.

Total number of arrests,	423
Total number of prosecutions,	559
Total number of fires investigated,	5,074
Total number of cases investigated (other than fires),	1,790
Total amount of fines and costs imposed,	\$7,568 75
Total value of stolen property recovered,	\$9,396 00
Total amount of restitution made in criminal cases,	\$4,540 00

REPORTS OF DETECTIVE OFFICERS.

CAPT. WILLIAM H. PROCTOR, IN COMMAND OF STEAMER "LEXINGTON."

Office, 1A State House, Boston.

I have been in command of the steamer "Lexington" during the past year, and she has been in active service from April 30 to Nov. 1, 1914.

Menhaden steamers have been numerous about Buzzards Bay and Vineyard Sound during the entire season, but there has been no violation of the law to my knowledge.

Number of arrests,	8
Number of prosecutions,	8
Number of cases investigated (other than fires),	10
Amount of fines and costs imposed,	\$100
Value of stolen property recovered,	\$600

Among the more important cases investigated were the following:—

Corrette Marino; crime, murder. Indicted. Pleaded guilty to manslaughter, and sentenced to one year in House of Correction.

John Buffalino; crime, murder. Indicted. Pleaded guilty to manslaughter, and sentenced to ten to fifteen years in State Prison.

Daniel J. Cooper; crime, murder. Indicted. Found guilty, and sentenced to be electrocuted.

Edward E. Manchester; crime, manslaughter. Found guilty, and sentenced to fifteen to eighteen years in State Prison.

William B. Sweeney; crime, murder. Indicted. Case pending.

Joseph M. Coldwell; crime, assault. Indicted. Found guilty, and sentenced to one year in House of Correction.

Philip Conley; crime, breaking and entering. Indicted. Case pending.

I have arrested two fugitives from other States and delivered one to officers from Pennsylvania and one to officers from Illinois.

OFFICER MICHAEL J. BARRETT. — ASSIGNED TO ENFORCING THE PROVISIONS OF LAW RELATING TO THE ARREST AND CARE OF TRAMPS.

Office, Room 1A State House, Boston.

Number of arrests,	30
Number of arrests in which I assisted,	2
Number of prosecutions,	25
Number of cases investigated (other than fires),	9
Number of fires investigated,	41
Amount of fines and costs imposed.	\$125
Value of stolen property recovered,	\$75

Among the more important cases investigated were the following:—

Gaetano DeVaio; crime, murder. Case now on trial.

Virginia Barbato; crime, murder. Case now on trial.

George W. Salvage; crime, incest. Case pending.

During the past year I have arrested 25 persons for violation of the tramp laws, and each was fined \$5.

OFFICER THOMAS E. BLIGH. — BERKSHIRE AND HAMPDEN COUNTIES.

Office, Court House, Pittsfield.

Number of arrests,	20
Number of arrests in which I assisted,	4
Number of arrests caused to be made,	9
Number of prosecutions,	21
Number of cases investigated (other than fires),	73
Number of fires investigated,	35
Amount of fines and costs imposed,	\$415
Value of stolen property recovered,	\$555

Among the more important cases investigated were the following:—

Michael Fabrizio; crime, murder. Escaped to Italy. Arrested and will be tried in Italy.

Vincenzo Allio; crime, murder. Escaped to Italy. Arrested and will be tried in Italy.

Alfred J. Brown; crime, breaking and entering. Found guilty, and sentenced to Massachusetts Reformatory.

Frank Hewitt; crime, arson and breaking and entering. Found guilty, and sentenced to Massachusetts Reformatory.

Amedee Gamache; crime, breaking and entering. Found guilty, and sentenced to six months in House of Correction.

Frank Whitecomb, Clarence Latimar, Clinton Dawley, Perry White; crime, breaking and entering. Found guilty, and placed on probation.

John A. Whitford; crime, forgery. Found guilty, and sentenced to six months in House of Correction.

John Luvera; crime, receiving stolen property. Found guilty, and fined \$200.

Frank E. Russell; crime, perjury. Case pending.

Frederick G. Button; crime, burning a building to defraud insurance company. Indicted. Case pending.

OFFICER ERNEST S. BRADFORD. — BARNSTABLE COUNTY.

Office, Hyannis.

Number of arrests,	41
Number of arrests in which I assisted,	4
Number of arrests caused to be made,	45
Number of prosecutions,	93
Number of cases investigated (other than fires),	175
Number of fires investigated,	6
Amount of fines and costs imposed,	\$607 75
Value of stolen property recovered,	\$3,007 00

Among the more important cases investigated were the following: —

David A. Smith; crime, breaking and entering and larceny. Found guilty, and sentenced to one year in House of Correction.

James Sears; crime, breaking and entering and larceny. Found guilty, and sentenced to six months in House of Correction.

Clinton Cotelle; crime, breaking and entering and larceny. Found guilty, and sentenced to State Industrial School at Shirley.

John Lumbert; crime, breaking and entering and larceny. Found guilty, and sentenced to six months in House of Correction.

George E. Baker; crime, breaking and entering and larceny. Found guilty, and sentenced to six months in House of Correction.

Clarence Y. Cotelle; crime, breaking and entering and larceny. Found guilty, and sentenced to four months in House of Correction.

Richard C. Isherwood; crime, uttering worthless checks. Found guilty, and sentenced to six months in House of Correction.

Henry Chase; crime, larceny. Found guilty, and sentenced to six months in House of Correction.

Oscar Gray; crime, breaking and entering and larceny. Found guilty, and sentenced to one year in House of Correction.

Drusilla Honey; crime, breaking and entering and larceny. Found guilty, and sentenced to one year in House of Correction.

Florence Parker; crime, forgery and uttering. Found guilty, and sentenced to Sherborn Reformatory.

August Alder; crime, assault with dangerous weapon. Found guilty, and sentenced to six months in House of Correction.

William M. Nickerson; crime, breaking and entering and larceny. Found guilty, and sentenced to six months in House of Correction.

Edward F. Long; crime, breaking and entering and larceny. Found guilty, and sentenced to Massachusetts Reformatory.

Earl P. Crowell; crime, breaking and entering and larceny. Found guilty, and sentenced to State Industrial School at Shirley.

Harry West; crime, breaking and entering and larceny. Found guilty, and sentenced to six months in House of Correction.

George E. Crowle, M.D.; crime, illegal practicing of medicine. Found guilty, and fined \$100.

OFFICER JOSEPH V. DALY. — FRANKLIN AND HAMPSHIRE COUNTIES.

Office, Masonic Block, Northampton.

Number of arrests,	59
Number of arrests caused to be made, . . .	11
Number of prosecutions,	74
Number of cases investigated (other than fires),	197
Number of fires investigated,	4
Amount of fines and costs imposed,	\$1,565 00
Value of stolen property recovered,	\$1,869 50

Among the more important cases investigated in conjunction with Officer Nelligan were the following:—

Percy Goss, alias C. H. Kimball; crime, worthless checks. Found guilty, and sentenced to one year in House of Correction.

Charles A. Stanton; crime, breaking and entering and larceny in night. Held for grand jury.

Bertram D. Cannon; crime, forgery. Held for grand jury.

Hector Boudreau; crime, robbery. Found guilty, and sentenced to Massachusetts Reformatory.

Theron R. Brown; crime, horse thief. Committed to insane hospital.

Rev. Charles S. Bates; crime, unnatural act. Found guilty, and sentenced to two and one-half years in House of Correction.

William F. Ames; crime, assault to ravish. Found guilty, and sentenced to two and one-half to seven years in State Prison.

Vena Hassard; crime, accessory to rape. Held for grand jury.

Frank Hassard; crime, accessory to rape. Held for grand jury.

Rocci Creaser; crime, rape. Held for grand jury.

Jerry Guyette; crime, assault to rape. Held for grand jury.

James G. Bridgman; crime, larceny. Held for grand jury.

William Harper and Mildred Harper; crime, keeping disorderly house. Found guilty, and fined \$75 each. Paid.

H. H. Briggs and Ella Briggs; crime, larceny. Found guilty.

H. H. Briggs fined \$250; Ella Briggs fined \$200.

OFFICER THOMAS A. DEXTER. — DUKES AND NANTUCKET COUNTIES.

Office, Edgartown.

Number of arrests,	11
Number of arrests caused to be made,	2
Number of prosecutions,	16
Number of cases investigated (other than fires),	93
Number of fires investigated,	8
Amount of fines and costs imposed,	\$261
Value of stolen property recovered,	\$380

Among the more important cases investigated were the following:—

Ralph Stone; crime, statutory rape. By consent was allowed to plead guilty to assault. Sentenced to one year in House of Correction.

John A. Fish; crime, burning vessel for insurance. Case tried in United States Court, Boston. Found guilty, and sentenced to five years' imprisonment at Atlanta. Case referred to Supreme Court on exceptions, which were allowed, and a new trial granted, at which he was found not guilty.

William Legg; crime, carnal knowledge of female child. Found guilty, and was allowed to go to Soldiers' Home.

Joseph Swartz; crime, rape. By consent was allowed to plead guilty to breaking and entering and assault, and sentenced to four months in House of Correction.

Robert Laidlaw; crime, assault and battery. Found guilty, and fined \$20.

Harold Norton; crime, assault and battery. Found guilty, and fined \$50.

Abbott Fisher; crime, assault and battery. Found guilty, and fined \$50.

John Beatty; crime, having short lobsters in possession. Found guilty, and fined \$50.

Joseph F. Silvia; crime, forgery and uttering. Found guilty, and sentenced to three years in State Prison.

Harry Walker; crime, assault and battery. Found guilty, and fined \$20.

Ellery Hendricks; crime, forgery. Case pending.

James Pratt; crime, larceny. Case settled by court allowing him to make good amount of property stolen, \$70.

Louis Wentworth; crime, larceny. Case pending.

OFFICER FREDERICK F. FLYNN. — ESSEX AND MIDDLESEX COUNTIES.

Office, Lawrence.

Number of arrests,	13
Number of arrests in which I assisted, . . .	3
Number of arrests caused to be made, . . .	3
Number of prosecutions,	16
Number of cases investigated (other than fires),	63
Number of fires investigated,	31
Amount of fines and costs imposed,	\$100
Number of gasoline storage locations inspected,	127

Among the more important cases investigated were the following: —

Alfonso Collura; crime, murder. Indicted. Case pending.

Michael Esslay, alias George Dahrooge; crime, burning to injure the insurer. Found guilty, and sentenced to three and one-half to four and one-half years in State Prison.

Fred J. Derry; crime, accessory to burning a building. Found guilty, and sentenced to three to five years in State Prison.

Henry B. Judge; crime, burning a building. Found guilty, and placed on probation.

Arthur C. Thwing; crime, abortion. Found guilty, and sentenced to two and one-half to three and one-half years in State Prison.

Leon W. Leach; crime, breaking and entering and larceny. Found guilty, and sentenced to three and one-half to four and one-half years in State Prison.

Leland H. Wilbur; crime, horse stealing. Found guilty, and sentenced to two years in House of Correction.

John J. McAuliff; crime, burglarious implements in possession. Found guilty, and sentenced to three to four years in State Prison.

John Connors; crime, burglarious implements in possession. Found guilty, and sentenced to three to four years in State Prison.

In company with Attorney Judd Dewey of Boston, and as agents named in the executive warrants of the Governor of the Commonwealth of Massachusetts and the President of the United States of America, left Boston on Oct. 16, 1913, for Tokyo, Japan, to extradite John Eills, charged with perjury, committed at Chicopee, Mass. (extradition papers having been previously forwarded to American ambassador at Tokyo, Japan, and John Eills being under arrest before our departure from Boston).

We arrived at Tokyo, Japan, on the afternoon of Nov. 5, 1913. Before we were afforded an opportunity to present our papers the defendant Eills was released, and all efforts to have case reopened and our side heard were denied us by the Japanese officials. We

consulted eminent counsel, and upon advice of American ambassador left Japan for America on Nov. 13, 1913, arriving at Boston Nov. 29, 1913, unsuccessful.

OFFICER JAMES J. GRADY. — SUFFOLK COUNTY.

Office, 1A State House, Boston.

Number of arrests,	1
Number of prosecutions,	1
Number of cases investigated (other than fires),	3
Number of fires investigated,	581
Amount of fines and costs imposed,	\$100

OFFICER FRANK P. HARDIMAN. — ASSIGNED FOR THE INSPECTION OF FIRES IN THE SUFFOLK DISTRICT.

Office, 1A State House, Boston.

Number of arrests,	2
Number of arrests in which I assisted,	3
Number of cases investigated (other than fires),	12
Number of fires investigated,	1,046

OFFICER ARTHUR E. KEATING. — SUFFOLK COUNTY.

Office, Room 1A, State House, Boston.

Number of arrests,	17
Number of arrests caused to be made,	9
Number of prosecutions,	38
Number of cases investigated (other than fires),	184
Amount of fines and costs imposed,	\$895
Restitution made in insurance cases amounting to	\$2,529

During the year I have had eleven extradition cases, the defendants in three of which went to Pennsylvania, one each to Missouri, Tennessee, Michigan, New York, New Jersey, New Hampshire, one wanted in West Virginia is still pending before the Supreme Court, and one wanted in California defaulted \$1,000 bail in the Brighton Municipal Court, and several weeks later surrendered to the California authorities.

The only case of major importance during the year was that of Joseph A. Plouff, president of the Lafayette Savings Bank of Boston, in which case I had the assistance of Officer Sherlock. Mr.

Plouff was indicted in five counts for the larceny of several thousand dollars from five different banks in Boston by false pretences; he pleaded guilty to all the counts and was sentenced to not less than four nor more than seven years in the State Prison.

OFFICER JAMES J. MACKSEY. — BRISTOL COUNTY.

Office, Old Court House, Taunton.

Number of arrests,	25
Number of arrests in which I assisted, . .	3
Number of arrests caused to be made, . .	6
Number of prosecutions,	25
Number of cases investigated (other than fires),	163
Number of fires investigated,	12
Amount of fines and costs imposed, . . .	\$450
Value of stolen property recovered, . . .	\$1,300

Among the more important cases investigated were the following:—

Edward E. Manchester; crime, manslaughter. Found guilty, and sentenced to fifteen to eighteen years in State Prison.

Mabel Scudder; crime, murder. Case pending.

Gaetano DeVaio and Virginia Barbato; crime, murder. Case now on trial. Assisted in investigation.

OFFICER ROBERT E. MOLT. — WORCESTER COUNTY.

Office, 476 Main Street, Worcester.

Number of arrests,	17
Number of arrests in which I assisted, . .	6
Number of arrests caused to be made, . .	9
Number of prosecutions,	32
Number of cases investigated (other than fires),	56
Number of fires investigated,	37
Amount of fines and costs imposed, . . .	\$1,275
Value of stolen property recovered, . . .	\$315

Among the more important cases investigated, in which Officer McCarthy assisted, were the following:—

Daniel J. Cooper; crime, murder. Found guilty, and sentenced to be electrocuted. Assisted by Officer Murray in this case.

Said Mamed; crime, burning. Found guilty, and defaulted.

George Judson; crime, robbery. Found guilty, and sentenced to five years in Massachusetts Reformatory.

James Rich; crime, assault with intent to murder. Found guilty, and sentenced to two years in House of Correction.

Feliz Beso; crime, breaking and entering and larceny. Found guilty, and sentenced to five months in House of Correction. Sentence suspended.

Daniel Scanlon; crime, breaking and entering and larceny. Found guilty, and sentenced to five months in House of Correction. Sentence suspended.

Peter Daigle; crime, unnatural act. Found guilty, and placed on probation.

Elmer E. Smith; crime, lewdness. Found guilty, and sentenced to one year in House of Correction.

Louis Seymour; crime, breaking and entering and larceny. Found guilty, and placed on probation.

Edward F. Deignan; crime, conspiracy. Defaulted \$2,000 bail.

Abraham Cohen; crime, larceny. Found guilty, and sentenced to one year in House of Correction.

Victor Carpenter; crime, breaking and entering and larceny. Found guilty, and sentenced to five years in Massachusetts Reformatory.

Victor Fields; crime, breaking and entering and larceny. Found guilty, and placed on probation.

Ozias Brenneau; crime, breaking and entering and larceny. Found guilty, and placed on probation.

Rene Gurtin; crime, breaking and entering and larceny. Found guilty, and placed on probation.

Warren A. Beard; crime, obscene pictures. Found guilty, and sentenced to one year in House of Correction. Appealed, and case pending.

Thomas Bombard; crime, murder. Found guilty, and sentenced to life imprisonment in State Prison.

Adam Sibiskoe; crime, bastardy. Found guilty, and case filed.

Albert H. Moore; crime, breaking and entering and larceny. Case pending.

Felix Vedir; crime, lewdness. Found guilty, and sentenced to five months in House of Correction.

W. H. Mittam; crime, violation of white slave law. Case pending.

Barnet Coplan, alias Goldfarb; crime, larceny. Found guilty, and sentenced to two and one-half to four years in State Prison.

Carmine Roberto; crime, manslaughter. Found guilty, and sentenced to eighteen to twenty years in State Prison.

Eugene Griffiths; crime, assault. Found guilty, and fined \$1,000.

George Landry; crime, breaking and entering and larceny. Found guilty, and sentenced to three to five years in State Prison.

OFFICER JOHN H. SCOTT. — NORFOLK AND PLYMOUTH COUNTIES.

Office, Braintree.

Number of arrests,	14
Number of prosecutions,	14
Number of cases investigated (other than fires),	61
Amount of fines and costs imposed,	\$175
Value of stolen property recovered,	\$300
Value of gaming implements forfeited,	\$125

I have performed seven days' duty at the Salem fire, eight days' strike duty, and five days on special assignment.

Among the more important cases investigated were the following: —

Abraham Sherman; crime, horse stealing. Case pending.

John Kean; crime, breaking and entering. Found guilty, and committed to the Lyman School.

Michael E. Coleman; crime, cattle stealing. Found guilty, and sentenced to one year in House of Correction.

Victor P. Condon, Jr.; crime, nonsupport of children. Found guilty, and sentenced to six months in House of Correction or pay \$5 per week to children.

Benjamin F. Ellis; crime, cattle stealing. Found guilty, and sentenced to one year in the House of Correction.

William H. Clark; crime, shooting his brother Silas. Case pending.

John Cull; found dead. Case under investigation.

Robert Willy; crime, statutory rape. Found guilty, and sentenced to sixty days in House of Correction.

Paul R. Moulton; crime, manslaughter. No bill found.

OFFICER SILAS P. SMITH. — MIDDLESEX COUNTY.

Office, Court House, Cambridge.

Number of arrests,	22
Number of arrests in which I assisted,	3
Number of arrests caused to be made,	1
Number of prosecutions,	26
Number of cases investigated (other than fires),	242

Among the more important cases investigated were the following: —

William B. Sweeney; crime, murder. Sent to insane asylum.

Joseph W. Blais; crime, murder. Sent to insane asylum.

Charles F. Starrett; crime, murder. Sent to insane asylum.

James E. Harris; crime, murder. Case pending.

Francesco Luizza; crime, murder. Indicted. Case pending.

Alphonso Collura; crime, murder. Indicted. Case pending.

Emile Fealey; crime, murder. Case pending.

Thomas Bryant; crime, rape. Found guilty, and sentenced to five to eight years in State Prison.

Lewis Stanton; crime, breaking and entering. Found guilty, and sentenced to four years in House of Correction.

George W. Salvage; crime, rape. Found guilty, and sentenced to eleven to thirteen years in State Prison.

Mrs. Josephine Brosseau; crime, abortion. Case pending.

OFFICER ARTHUR G. WELLS. — ESSEX COUNTY.

Office, Lynn.

Number of arrests,	9
Number of arrests in which I assisted,	2
Number of arrests caused to be made,	4
Number of prosecutions,	6
Number of cases investigated (other than fires),	49
Number of fires investigated,	41
Amount of fines and costs imposed,	\$300
Value of stolen property recovered,	\$65

Among the more important cases investigated were the following:—

James Ehler; crime, assault to kill. Case pending.

Gaetano DeVaio and Virginia Barbato; crime, murder. Case now on trial.

John S. Murphy and Thomas Veno; crime, manslaughter. Case pending.

Antonio Rocha; crime, statutory rape. Case pending.

John Fido; crime, manslaughter. Found guilty, and sentenced to not less than two and one-half nor more than three and one-half years in State Prison.

In addition to the above I have performed four days' strike duty and six days' duty at fairs and celebrations.

REPORTS OF FIRE INSPECTORS.

OFFICER CHARLES F. RICE. — CHIEF FIRE INSPECTOR.

Office, 1B State House, Boston.

Number of arrests in which I assisted, . . .	15
Number of arrests caused to be made, . . .	15
Number of prosecutions,	15
Number of fires investigated,	192
Number of fire inquests held,	137

OFFICER JAMES ANDERSON. — FIRE INSPECTOR FOR THE HAMPDEN-BERKSHIRE DISTRICT.

Office, 21 Besse Place, Springfield.

Number of arrests,	6
Number of arrests in which I assisted, . . .	8
Number of arrests caused to be made, . . .	4
Number of prosecutions,	6
Number of cases investigated (other than fires),	9
Number of fires investigated,	285

OFFICER THOMAS F. EUSTACE. — FIRE INSPECTOR ASSIGNED TO THE SUFFOLK DISTRICT.

Office, 1A State House, Boston.

Number of arrests,	11
Number of arrests in which I assisted, . . .	4
Number of prosecutions,	11
Number of cases investigated (other than fires),	31
Number of fires investigated,	445
Value of stolen property recovered,	\$130

Among the more important cases investigated were the following:—

Francesco Luizza; crime, murder. Case pending.

Baldassare Luizza; crime, murder. Case pending.

Giuseppe Luizza; crime, murder. Case pending.

OFFICER RICHARD J. GRIFFIN.—FIRE INSPECTOR FOR BRISTOL,
BARNSTABLE, DUKES AND NANTUCKET COUNTIES.

Office, Old Court House, Taunton.

Number of arrests,	12
Number of arrests in which I assisted, . . .	11
Number of arrests caused to be made, . . .	3
Number of prosecutions,	12
Number of cases investigated (other than fires),	19
Number of fires investigated,	164
Amount of fines and costs imposed,	\$50

Among the more important cases investigated were the following:—

J. Fred Hamel; crime, breaking and entering and larceny. Pleaded guilty, and sentenced to four to six years in State Prison.

Edward Manchester; crime, manslaughter. Pleaded guilty, and sentenced to twenty years in State Prison.

Arthur T. Maloney; crime, breaking and entering and larceny. Indicted. Case pending.

Stephen Carlon; crime, breaking and entering and larceny. Indicted. Case pending.

John E. Moore; crime, breaking and entering and larceny. Indicted. Case pending.

Bozio Hyrohorchuck; crime, incest. Indicted. Case pending.

Paul Diamond; crime, attempted larceny from person. Indicted. Case pending.

George Turner; crime, attempted larceny from person. Indicted. Case pending.

William Arnold; crime, attempted larceny from person. Indicted. Case pending.

OFFICER EDWARD F. HERRIGAN.—MIDDLESEX DISTRICT.

Office, 1A State House, Boston.

Number of arrests,	26
Number of arrests in which I assisted, . . .	1
Number of prosecutions,	26
Number of cases investigated (other than fires),	45
Number of fires investigated,	267
Amount of fines and costs imposed,	\$20

OFFICER ARTHUR S. KIMBALL. — FIRE INSPECTOR FOR THE NORFOLK-
PLYMOUTH DISTRICT.

Office, 1A State House, Boston.

Number of arrests,	5
Number of prosecutions,	5
Number of cases investigated (other than fires),	3
Number of fires investigated,	224

Among the more important cases investigated were the following: —

Peter Beaton; crime, burning a building to defraud insurer. Found guilty, but defaulted before sentence was imposed.

Frank Skelton; crime, burning a building. Found guilty, and sentenced to two years in House of Correction.

Elizabeth Jones; crime, burning a building. Pleaded guilty, and placed on probation.

William F. Carroll; crime, burning a building. Adjudged insane and sent to Westborough State Hospital.

John D. Cook; crime, burning a building. Pleaded guilty, and sentenced to one year in House of Correction.

Samuel Cook; crime, burning a building. Pleaded guilty, and placed on probation.

OFFICER EDWARD J. MCCARTHY. — FIRE INSPECTOR FOR WORCESTER
COUNTY.

Office, 476 Main Street, Worcester.

Number of arrests,	16
Number of arrests in which I assisted,	7
Number of arrests caused to be made,	8
Number of prosecutions,	31
Number of cases investigated (other than fires),	50
Number of fires investigated,	165
Amount of fines and costs imposed,	\$700 00
Value of stolen property recovered,	\$214 50

Among the more important cases investigated, in which Officer Molt assisted, were the following: —

Tony Legaski, alias Tony Braue; crime, breaking and entering and larceny. Found guilty, and sentenced to eighteen months in House of Correction.

George Laprade; crime, burning. Found guilty, and committed to insane hospital.

William Marcel; crime, breaking and entering and larceny. Found guilty, and sentenced to five months in House of Correction. Appealed. Sentence suspended.

Salvatora Larosa; crime, assault with intent to murder. Found guilty, and sentenced to six years in State Prison.

Charles L. Goodwin; crime, bigamy. Found guilty, and sentenced to one year in House of Correction.

Cora Wheeler, alias Smith; crime, accessory to larceny, and lewdness. Found guilty of lewdness, and sentenced to four months in House of Correction.

Ella F. Stiles; crime, murder. Found guilty of manslaughter, and sentenced to ten years at Sherborn Reformatory.

Fred Dowd, alias Ducette; crime, breaking and entering and larceny. Found guilty, and placed on probation.

N. Vinego; crime, assault with intent to murder. Found guilty, and sentenced to six months in House of Correction.

Cleone Putnam; crime, burning. Found guilty, and committed to asylum.

John Hutchinson; crime, breaking and entering and larceny. Found guilty, and sentenced to one year in House of Correction.

Frank Carpenter; crime, breaking and entering and larceny. Found guilty, and sentenced to five years in Massachusetts Reformatory.

Peter Mitchell; crime, breaking and entering and larceny. Found guilty, and sentenced to five years in Massachusetts Reformatory.

David Allaire; crime, breaking and entering and larceny. Found guilty, and placed on probation.

Rufus Dana; crime, burning. Found guilty, and sentenced to ten years in State Prison.

Johanna Pulaski; crime, larceny. Found guilty, and sentenced to three months in House of Correction. Appealed. Case pending.

John H. Allen; crime, lewdness. Found guilty, and committed to an asylum.

Thomas Kennedy; crime, breaking and entering and larceny. Found guilty, and sentenced to one year in House of Correction.

Maggie Vedir; crime, lewdness. Found guilty, and sentenced to Sherborn Reformatory.

Guiseppe Perillo; crime, manslaughter. Found guilty, and sentenced to three years in House of Correction.

Tony Perillo; crime, manslaughter. Found not guilty.

Leo B. Landy; crime, breaking and entering and larceny. Found guilty, and sentenced to three to five years in State Prison.

Kalil David; crime, larceny and practicing medicine illegally. Found guilty, fined \$100 and sentenced to three months in House of Correction.

OFFICER WILLIAM F. MURRAY. — FIRE INSPECTOR FOR ESSEX DISTRICT.

Office, Lynn.

Number of arrests,	11
Number of arrests in which I assisted, . .	4
Number of prosecutions,	11
Number of cases investigated (other than fires),	61
Number of fires investigated,	301
Amount of fines and costs imposed,	\$55

Among the more important cases investigated were the following: —

Daniel J. Cooper; crime, murder. Found guilty, and sentenced to be electrocuted. Assisted Officer Molt in this case.

Charles A. Robinson; crime, burning a building. Found guilty, and sentenced to five and one-half years in State Prison.

OFFICER EDWARD H. MURTAGH. — ASSIGNED FOR DUTY IN THE WAITING ROOM OF THE EXECUTIVE DEPARTMENT.

Office, 1A State House, Boston.

Number of arrests,	2
Number of arrests in which I assisted, . .	4
Number of cases investigated (other than fires),	70
Number of fires investigated,	58

OFFICER MAURICE P. NELLIGAN. — FIRE INSPECTOR FOR THE FRANKLIN-HAMPSHIRE DISTRICT.

Office, Masonic Block, Northampton.

Number of arrests,	24
Number of arrests in which I assisted, . .	11
Number of arrests caused to be made, . .	1
Number of prosecutions,	30
Number of cases investigated (other than fires),	47
Number of fires investigated,	80
Amount of fines and costs imposed,	\$200
Value of stolen property recovered,	\$585
Number of gasoline storage locations inspected, .	45

Among the more important cases investigated were the following:—

William F. Ames; crime, assault to ravish. Found guilty, and sentenced to two and one-half to seven years in State Prison.

Horace G. Pratt; crime, arson. Found guilty, and sentenced to one year in House of Correction.

John J. Guthrie; crime, arson. Held for grand jury. Case pending.

Edward H. Atwood; crime, arson. Found guilty, and sentenced to one year in House of Correction.

Henry Fournier; crime, arson. Found not guilty. Discharged.

James G. Bridgman; crime, embezzlement. Held in \$5,000 for grand jury.

Roswell W. Haynes; crime, sodomy. Case pending.

Leroy Fiske; crime, forgery and uttering. Case pending.

I also performed three days' strike duty at Northampton, and forty-five days' special duty at county fairs.

OFFICER EDWARD J. SHERLOCK.—UNASSIGNED.

Office, 1A State House, Boston.

Number of arrests,	14
Number of arrests in which I assisted,	30
Number of prosecutions,	11
Number of cases investigated (other than fires),	27
Number of fires investigated,	413
Amount of fines and costs imposed,	\$65

Among the more important cases investigated were the following:—

Pater Rasas; crime, burning to defraud. Found guilty, and sentenced to one year in House of Correction.

John Connors, alias Carey; crime, burglarious implements in possession. Found guilty, and sentenced to three to four years in State Prison.

John J. McAuliffe; crime, burglarious implements in possession. Found guilty, and sentenced to three to four years in State Prison.

Philip Albert, alias Alberti; crime, attempted larceny from person. Found guilty, and sentenced to two and one-half to four years in State Prison.

Dominic Russo, alias Romao; crime, attempted larceny from person. Found guilty, and sentenced to three and one-half to five years in State Prison.

Lorenzo Ponzza; crime, attempted larceny from person. Found guilty, and sentenced to two and one-half to four years in State Prison.

George W. Salvage; crime, incest. Case pending.

Joseph A. Plouff; crime, larceny. Indicted. Found guilty, and sentenced to four to seven years in State Prison.

OFFICER THOMAS A. THOMPSON. — FIRE INSPECTOR FOR THE SUFFOLK-MIDDLESEX DISTRICT.

Office, 1A State House, Boston.

Number of arrests,	7
Number of arrests in which I assisted,	9
Number of arrests caused to be made,	4
Number of prosecutions,	6
Number of cases investigated (other than fires),	38
Number of fires investigated,	638
Amount of fines and costs imposed,	\$10

Among the more important cases investigated was the following: —

Harry Hershman; crime, arson. Pleaded guilty. Case pending.

REPORT OF WALTER L. WEDGER, CHEMIST AND EXPERT ON EXPLOSIVES AND INFLAMMABLES.

Office, 2 State House, Boston.

Inspections.

Acetylene gas, storage and manufacture of,	5
Apartment houses,	8
Celluloid heel manufactories,	18
Celluloid storage,	9
Chemical laboratories,	1
Chemicals, storage of,	10
Dangerous buildings,	1
Dangerous signs on buildings,	1
Dry cleaning and dry dyeing establishments,	12
Dynamite boats,	3
Fireworks manufactories,	4
Fireworks storage,	3
Fireworks stores,	22

Garages and motor vehicle repair shops,	522
Gasoline engine installations,	2
Gasoline supply boats,	6
Gasometers,	1
Inflammable liquids, storage of, other than garages,	63
Inflammable substances, storage of,	2
Motion-picture film exchanges,	25
Oil storage stations,	3
Rubber manufactories,	3
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Total inspections,	724

Investigations.

Conferences with officials of cities and towns,	9
Destruction of bombs, alleged to have been placed with intent to injure persons and property,	2
Destruction of dangerous chemicals,	4
Destruction of fireworks, illegally stored,	1
Destruction of nitroglycerin left by safe blow- ers,	2
Explosions of acetylene gas,	4
Explosion of bomb,	1
Explosion in chocolate manufactory,	1
Explosion of dynamite,	1
Explosion of gasoline substitute,	1
Explosion of gasoline vapor at Metropolitan Sewerage Pumping Station, East Boston,	1
Explosions of hot water heaters in apartment houses,	3
Explosion of inflammable compounds,	1
Explosion of oxygen and acetylene gases,	1
Explosions and fires in celluloid scrap,	2
Explosion and fire in dry-cleaning establish- ments,	1
Fire at Arcadia Hotel, Boston,	1
Fire in confectionery manufactory,	1
Fires in chemical laboratories,	2
Fire among cotton goods,	1
Fires in fireworks manufactories,	3
Fires in garages,	6
Fire at Melvin Apartments, Allston,	1
Fire at rubber manufactory,	1
Fires in tanneries,	2
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Total investigations,	54

Analyses and Tests.

Analysis of ashes and other residue from fire, .	1
Analyses of celluloid,	12
Analyses of dangerous compounds,	23
Analyses of fireworks compounds,	11
Analyses of inflammable oils,	20
Analyses of inflammable insecticides,	4
Analyses of inflammable leather dressings,	9
Analyses of inflammable stove polish,	10
Analyses of inflammable metal polishes,	5
Analyses of poisonous gases,	2
Analyses of substances causing dust explosions,	2
Analyses of substances, supposed by the police to be dynamite,	2
Analyses of substances used in incendiarism,	8
Analyses of varnishes,	4
Analyses of volatile inflammable liquids,	14
Tests of building materials,	14
Test of celluloid substitute,	1
Test of blasting explosive,	1
Tests of firecracker explosives,	29
Test of fire extinguisher,	1
Test of fireproofing compound,	1
Tests of garage heaters,	2
Tests of inflammable merchandise,	2
Tests of inflammable motion-picture films,	2
Tests of oily rags, for spontaneous combustion,	6
Tests of oil separators,	3
Tests of combustible pipe coverings,	2
Test of static electricity in gasoline,	1
Tests of sewer gases,	2
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Total analyses and tests,	194

In addition to the above, I have attended court four days as a witness in prosecutions and at inquests, and have also been engaged at the office for one hundred and ten days on inquests, conferences with officials, preparation of technical regulations and correspondence.

GENERAL STATEMENT OF OFFENCES PROSECUTED.

Abandonment of wife and child,	1
Abortion,	1
Abuse of female child,	2
Accessory to burning a building,	2
Accessory to rape,	2
Adultery,	2
Arson,	13
Assault,	5
Assault and battery,	11
Assault to rape,	2
Assault to rob,	1
Assault with a dangerous weapon,	7
Assault with intent to kill,	1
Attempt to burn a building,	2
Attempt to commit arson,	2
Attempt to commit larceny from the person,	2
Attempt to defraud an insurance company,	1
Attempt to rape,	2
Bastardy,	5
Blackmail,	1
Breaking and entering,	69
Burning a building,	23
Carrying concealed weapons,	2
Common drunkard,	2
Concealing leased property,	1
Conducting lying-in hospital without a license,	1
Conspiracy to blackmail,	1
Contempt of court,	1
Criminal trespass,	27
Cruelty to animals,	6
Delinquent children,	9
Desertion,	1
Disturbing the peace,	9
Drunkenness,	1
Evading railroad fare,	3
Exposing obscene pictures,	1
Failing to register birth and death of child,	1
Forgery,	8
Fugitive from justice,	1
Giving false fire alarm,	1
Having burglars' tools in possession,	2
Idle and disorderly,	8
Illegal gaming,	5

Illegal storage of dynamite,	1
Illegal storage of gasoline,	1
Illegal storage of matches,	6
Illegal transportation of dynamite,	1
Illegally granting degrees (R. L., c. 208, § 75), .	1
Incest,	1
Indecent assault,	2
Keeping disorderly house,	3
Larceny,	77
Larceny in a building,	1
Lewd and lascivious cohabitation,	24
Malicious mischief,	9
Manslaughter,	9
Murder,	11
Nonsupport of wife and minor children, . . .	15
Nonsupport of bastard,	1
Neglected child,	1
Perjury,	4
Polygamy,	3
Placing obstruction on railroad track, . . .	3
Practicing medicine without a certificate, . .	19
Promoting public boxing exhibition,	7
Rape,	8
Ravishing female child,	1
Receiving stolen property,	7
Registering bets and selling pools,	3
Robbery,	7
Setting forest fires,	4
Sodomy,	3
Statutory rape,	3
Threatening and extortion,	1
Unlawful appropriation of automobile, . . .	5
Unlicensed junk dealer,	5
Unlicensed second hand dealer,	1
Unnatural act,	5
Uttering forgery,	1
Vagabonds,	9
Vagrancy,	3
Violation of automobile law,	4
Violation of banking law,	1
Violation of corporation law,	4
Violation of explosives law,	1
Violation of fishery law,	3
Violation of insurance law,	15
Violation of liquor law,	9

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Violation of optometry law,	1
Violation of smoke law,	3
Wayward children,	4
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Total,	559

Respectfully submitted,

GEORGE C. NEAL,
Deputy Chief.

BUILDING INSPECTION DEPARTMENT.

JOHN H. PLUNKETT, *Deputy Chief.*

BUILDING INSPECTION DEPARTMENT.

REPORT OF JOHN H. PLUNKETT, *Deputy Chief*.

OFFICE, 2 STATE HOUSE, BOSTON.

To the Chief of the District Police.

SIR: — The duties of the members of the building inspection department consist, under the provisions of chapter 655, Acts of 1913, in the enforcement of the statutes of the Commonwealth relative to the safety of occupancy in certain classes of buildings, in so far as providing proper egress therefrom, the proper means to prevent, as far as possible, the spread of fire, and the means to extinguish fire; also the installation of proper and sufficient sanitary, heating and ventilating appliances therein. They are also required, if called upon by the mayor and aldermen of any city or the selectmen of any town which has not accepted the provisions of sections 4 to 9 of such Act, which city or town, therefore, has no building inspector, to inspect any building or other structure represented to be unsafe or dangerous to life or limb, and to proceed under said sections to have the same removed or rendered safe and secure. By the provisions of such chapter the duty is also imposed upon the members of this department to supervise the construction of certain classes of buildings, in so far as relates to the application of proper methods of construction for retarding the spread of fire; the proper location and construction of means of egress therefrom; the installation of sufficient and proper heating, ventilating and sanitary appliances therein; and to enforce the requirements of said chapter, and the regulations of the Chief of the District Police, which, by virtue of section 54, he is required to issue. They are also required to enforce the provisions of chapter 791, Acts of 1914, which relate

to the operation of the cinematograph, the exhibition of motion pictures, and the regulations relating thereto.

Prior to the enactment of chapter 655, Acts of 1913, and under the provisions of previous statutes, the owner or architect was required to file plans, for buildings to be erected, with the inspector of the respective district; but, by the provisions of this chapter, the Chief of the District Police is authorized to designate a member of the building inspection department to act as supervisor of plans, whose duty it is, by a provision of said statute, to receive all plans for the erection and alteration of buildings and to act officially thereupon. Section 15 of this statute designates the class of buildings to which the law applies, and provides for the filing of plans and specifications therefor with the supervisor of plans, whose duty it is to issue a certificate of approval of said plans and specifications, or a specification of requirements for such changes in construction as he may deem necessary, in order that the building when completed shall meet the requirements of law; the plans and specifications are then forwarded to the inspector in whose district the building is to be erected, whose duty it is to enforce the requirements thereof. This change in the method of filing the plans has met with the general indorsement of all parties interested; a more uniform enforcement of law is thus obtained, and the question of varying personal opinion eliminated. This method of procedure has increased the efficiency of the department materially, as may be determined by the fact that the number of inspections herein reported shows an increase of almost 25 per cent. over those of the previous year, the inspectors thus being able to devote more of their time to the inspection of existing buildings within their respective districts.

Under the provisions of this statute all industrial buildings wherein are employed ten or more persons, and all apartment or tenement houses having eight or more rooms above the second story, come within its requirements; whereas prior to its enactment certain classes of buildings, such as apartment or tenement houses to have less than ten rooms above the second story, and industrial buildings of

less than three stories in height, were exempt from any requirement of law. This provision of law has increased the number of plans for industrial buildings filed at this office by 80 per cent., while those for apartment and tenement houses have more than doubled in number. Also, the requirements of this chapter have been enforced upon owners of buildings, which prior to its enactment were permitted to be occupied without restriction, owing to the fact that the previous statute was not applicable thereto, although in many of this class of buildings the number of occupants was greater than in some of larger area and with a greater number of rooms, while the egresses were in most cases neither proper nor sufficient. These facts seem to justify the demand made for the changes in the law. It is a pleasure to report that the regulations issued by you, in conformity with the requirements of this chapter, have been accepted and complied with by all owners of property to which they were applicable; and the almost unanimous approval with which they have been received is certainly an encouraging sign of their future usefulness.

The following comparative statement of the number of plans filed, the inspections and visits made, and of certificates issued during the past three years indicates the increased amount of such duties accomplished during the past year: —

YEAR.	Plans filed.	Inspections.	Visits.	Certificates issued.
1912,	561	5,771	4,047	1,902
1913,	511	6,713	4,299	3,160
1914,	923	8,235	7,749	4,915

By the enactment of chapter 806, Acts of 1913, relating to the installation, alteration and inspection of elevators, an additional duty was imposed upon the members of this department, as they are required thereby to enforce the provisions of this statute, and the regulations framed by the Board of Elevator Regulations under the requirements

thereof, in all the cities and towns of the Commonwealth in which there is no building inspector. Very little has been accomplished by the department in the enforcement of this statute, as the regulations framed by the Board were not ready for distribution until late in August, leaving only about two months in which to do the work of elevator inspection prior to the closing of the year on Oct. 31, 1914.

In consequence of the additional duty of elevator inspection now imposed upon the members of this department, and in view of the fact that there is not at present a sufficient number of inspectors to properly enforce the requirements of existing law, there being only eighteen inspectors, I would respectfully suggest that legislation be requested for the appointment of five additional inspectors.

Since my appointment as deputy chief of this branch of the department, Sept. 1, 1914, the utmost loyalty has been shown me by the inspectors, also an energy and desire to perform their work to the best of their ability and with the same high standard of efficiency for which the department has always been noted.

The prosecutions made during the year by the building inspectors and the results thereof are given in the following statement:—

CAUSE OF PROSECUTION.	Number of Prosecutions.	Fined.	Filed.	Discharged.	Total Amount of Fines and Costs.
Failure to comply with written orders, . . .	1	-	1	-	-
Violation of law relative to filing plans, . . .	1	-	1	-	\$10
Violation of law relative to moving pictures, . .	7	2	4	1	89
Violation of law relative to providing knotted ropes in sleeping rooms in hotel.	1	-	1	-	-
Totals,	10	2	7	1	\$99

ASSIGNMENT OF DISTRICTS.

The following assignments of districts are now in force: —

BUILDING INSPECTORS.

District No. 1.

ANSEL J. CHENEY, *Building Inspector.*

Office, 12 Kinsman Block, Salem.

BEVERLY	Lynnfield	Rockport
Danvers	Manchester	SALEM
Essex	Marblehead	Saugus
GLOUCESTER	Middleton	Topsfield
Hamilton	Peabody	Wenham

District No. 2.

ANGUS H. McDONALD, *Building Inspector.*

Office, 12 Kinsman Block, Salem.

Amesbury	Ipswich	NEWBURYPORT
Boxford	LYNN	Rowley
Georgetown	Merrimac	Salisbury
Groveland	Nahant	Swampscott
HAVERHILL	Newbury	West Newbury

District No. 3.

JEREMIAH J. CAREY, *Building Inspector.*

Office, 71 Central Block, Lowell.

Andover	Dunstable	North Andover
Billerica	LAWRENCE	Tewksbury
Chelmsford	LOWELL	Tyngsborough
Dracut	Methuen	Westford

District No. 4.

ELMER LEWIS, *Building Inspector.*

Office, 2 State House, Boston.

Arlington	MALDEN	Stoneham
Bedford	MEDFORD	Wakefield
Burlington	MELROSE	Wilmington
Carlisle	North Reading	Winchester
EVERETT	Reading	WOBURN
Lexington	SOMERVILLE	

District No. 5.RICHARD S. BEYER, *Building Inspector.*

Office, 2 State House, Boston.

Acton	Littleton	Sudbury
Belmont	Maynard	WALTHAM
Boxborough	Natick	Watertown
CAMBRIDGE	NEWTON	Wayland
Concord	Stow	Weston
Lincoln		

District No. 6.WILLIAM J. MCKEEVER, *Building Inspector.*

Office, 2 State House, Boston.

Avon	Franklin	QUINCY
Bellingham	Holbrook	Randolph
Braintree	Medfield	Sharon
Bridgewater	Medway	Stoughton
BROCKTON	Millis	Walpole
Brookline	Milton	Wellesley
Canton	Needham	West Bridgewater
Dedham	Norfolk	Westwood
Dover	Norwood	Weymouth
East Bridgewater	Plainville	Wrentham
Foxborough		

District No. 7.JOHN J. TERRY, *Building Inspector.*

Office, 2 State House, Boston.

Abington	Hanson	Plymouth
Carver	Hingham	Plympton
CHELSEA	Hull	Revere
Cohasset	Kingston	Rockland
Duxbury	Marshfield	Seituate
Halifax	Norwell	Whitman
Hanover	Pembroke	Winthrop

District No. 8.WILLIAM H. CAIRNS, *Building Inspector.*

Office, Hudner Building, Fall River.

Attleborough	Lakeville	Rehoboth
Berkley	Mansfield	Seekonk
Dartmouth	Middleborough	Somerset
Dighton	North Attleborough	Swansea
Easton	Norton	TAUNTON
FALL RIVER	Raynham	Westport
Freetown		

District No. 9.FRANK W. SAUNDERS, *Building Inspector.*

Office, Hudner Building, Fall River.

Acushnet	Falmouth	Orleans
Barnstable	Gay Head	Provincetown
Bourne	Gosnold	Rochester
Brewster	Harwich	Sandwich
Chatham	Marion	Tisbury
Chilmark	Mashpee	Truro
Dennis	Mattapoissett	Wareham
Eastham	Nantucket	Wellfleet
Edgartown	NEW BEDFORD	West Tisbury
Fairhaven	Oak Bluffs	Yarmouth

District No. 10.JOHN F. CASEY, *Building Inspector.*

Office, 476 Main Street, Worcester.

Ashby	Framingham	MARLBOROUGH
Ashland	Groton	Pepperell
Ayer	Harvard	Sherborn
Berlin	Holliston	Shirley
Bolton	Hopkinton	Southborough
Boylston	Hudson	Townsend
Clinton	Lancaster	* WORCESTER
FITCHBURG	Lunenburg	

* Territory northeast of Salisbury Street to Lincoln Square, east of Boston & Maine Railroad to Union Station, east of Boston & Albany Railroad to Auburn line.

District No. 11.AMBROSE W. ISELE, *Building Inspector.*

Office, 476 Main Street, Worcester.

Auburn	Mendon	Spencer
Blackstone	Milford	Sturbridge
Brookfield	Millbury	Sutton
Charlton	New Braintree	Upton
Douglas	North Brookfield	Uxbridge
Dudley	Northbridge	Webster
Grafton	Oxford	West Brookfield
Hopedale	Southbridge	* WORCESTER
Leicester		

* South side of Front and Pleasant streets, from Paxton line to Union Station; thence west of Boston & Albany Railroad.

District No. 12.WALTER A. PENNIMAN, *Building Inspector.*

Office, 476 Main Street, Worcester.

Ashburnham	Oakham	Templeton
Barre	Paxton	West Boylston
Gardner	Phillipston	Westborough
Holden	Princeton	Westminster
Hubbardston	Rutland	Winchendon
Leominster	Shrewsbury	* WORCESTER
Northborough	Sterling	

* Pleasant and Front streets from Paxton line to Union Station; northwest of Boston & Maine Railroad from Union Station to Lincoln Square; northwest of Salisbury Street from Lincoln Square to the Holden line.

District No. 13.ERNEST E. CLEVELAND, *Building Inspector.*

Office, 21 Besse Place, Springfield.

Agawam	Huntington	SPRINGFIELD
Blandford	Longmeadow	Tolland
Brimfield	Middlefield	Wales
Chester	Monson	Ware
East Longmeadow	Montgomery	Warren
Granville	Palmer	West Springfield
Hampden	Russell	Westfield
Hardwick	Southwick	Wilbraham
Holland		

District No. 14.ARTHUR F. ROACH, *Building Inspector.*

Office, 21 Besse Place, Springfield.

Amherst	Goshen	Petersham
Athol	Granby	Plainfield
Belchertown	Greenwich	Prescott
Chesterfield	Hadley	Royalston
CHICOPEE	Hatfield	South Hadley
Cummington	HOLYOKE	Southampton
Dana	Ludlow	Westhampton
Easthampton	NORTHAMPTON	Williamsburg
Enfield	Pelham	Worthington

District No. 15.SYDNEY H. CLIFFE, *Building Inspector.*

Office, Kimbell Block, North Adams.

Adams	Hawley	Peru
Alford	Heath	PITTSFIELD
Ashfield	Hinsdale	Richmond
Becket	Lanesborough	Rowe
Bernardston	Lee	Sandisfield
Buckland	Lenox	Savoy
Charlemont	Leverett	Sheffield
Cheshire	Leyden	Shelburne
Clarksburg	Monroe	Shutesbury
Colrain	Montague	Stockbridge
Conway	Monterey	Sunderland
Dalton	Mount Washington	Tyringham
Deerfield	New Ashford	Warwick
Egremont	New Marlborough	Washington
Erving	New Salem	Wendell
Florida	NORTH ADAMS	West Stockbridge
Gill	Northfield	Whateley
Great Barrington	Orange	Williamstown
Greenfield	Otis	Windsor
Hancock		

Supervisor of Plans.

LEMUEL POPE.

Office, 2 State House, Boston.

Special Duty.

HARRY ATKINSON, *Building Inspector.*

EVERETT E. RYAN, *Building Inspector.*

Office, 2 State House, Boston.

REPORTS OF BUILDING INSPECTORS.
REPORT OF INSPECTOR LEMUEL POPE, SUPERVISOR OF PLANS.
Relating to Plans for the Erection and Alteration of Buildings.

BUILDINGS.	Plans submitted.	Con- sulta- tions.	FORWARDED TO INSPECTORS.				Total forwarded.	Under Consid- era- tion.	Total filed.
			Specifica- tions.	Certi- ficates.	Without Action.	Construc- tion abandoned.			
Theatres,	89	139	2	19	1	2	24	-	24
Public halls,	113	145	9	23	1	3	36	6	42
Special halls,	24	33	3	2	-	-	5	-	5
Miscellaneous halls,	165	176	16	66	1	2	85	4	89
Churches,	92	86	5	45	1	1	52	4	56
Schools,	222	238	18	86	4	2	110	10	129
Hotels, lodging or boarding houses,	55	40	10	22	1	2	35	4	39
Apartment and tenement houses,	344	179	70	213	3	3	289	5	294
Industrial buildings,	134	71	15	98	2	1	116	3	119
Part industrial buildings,	65	52	8	37	2	1	48	-	48
Miscellaneous buildings,	67	75	5	18	-	2	25	17	42
Totals,	1,370	1,234	161	629	16	19	825	62	887

Miscellaneous Duties.

Moving-picture operators' licenses renewed, 169.

REPORT OF INSPECTOR RICHARD S. BEYER, ACTING SUPERVISOR OF PLANS.¹
Relating to Plans for the Erection and Alteration of Buildings.

BUILDINGS.	Plans submitted.	Consultations.	FORWARDED TO INSPECTORS.				Total forwarded.	Under Consideration.	Total filed.
			Specifications.	Certificates.	Without Action.	Construction abandoned.			
Theatres,	1	1	-	-	-	-	-	-	-
Public halls,	3	3	1	-	-	-	1	-	1
Special halls,	1	1	-	-	-	-	-	-	-
Miscellaneous halls,	5	6	-	1	-	-	1	1	2
Churches,	4	3	1	2	-	-	3	-	3
Schools,	12	11	-	4	-	-	4	5	9
Hotels, lodging or boarding houses,	2	2	-	-	-	-	-	-	-
Apartment and tenement houses,	12	7	1	3	-	-	4	3	7
Industrial buildings,	4	7	-	1	-	-	1	2	3
Part industrial buildings,	6	1	-	2	-	-	2	-	2
Miscellaneous buildings,	17	10	-	3	-	-	3	6	9
Totals,	67	52	3	16	-	-	19	17	36

¹ For twelve days.

REPORT OF INSPECTOR ELMER LEWIS, DISTRICT NO. 4.
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Con- sulta- tions.	Changes inspected.	Construc- tion inspected.	Inspec- tions.	Visits.	Certif- icates issued.	Heating and Ven- tilation inspected.	Approved.	Reported.
Theatres,	4	8	2	30	99	26	-	-	-	-
Special halls,	-	-	1	2	23	44	-	-	-	-
Public halls,	6	8	3	17	59	90	-	-	-	-
Miscellaneous halls,	5	5	2	10	146	220	48	-	-	-
Churches,	7	-	-	2	21	8	-	-	-	-
Schools,	6	1	-	9	16	34	-	4	-	-
Hotels, lodging and boarding houses,	2	9	-	-	17	28	-	-	-	-
Apartment and tenement houses,	5	2	-	8	4	16	-	-	-	-
Industrial buildings,	3	1	-	4	7	27	-	-	-	-
Part industrial buildings,	2	2	-	6	2	7	-	-	-	-
Miscellaneous buildings,	6	2	-	4	5	51	-	-	17	-
Special permits for entertainments,	-	-	-	-	18	-	-	-	-	-
Special investigations,	-	-	-	-	-	5	-	-	-	-
Totals,	46	36	8	92	417	556	48	4	17	-

Miscellaneous Duties.

Orders issued: written, 85; verbal, 17,	102	Moving-picture machines: inspected, 11; approved, 11,	11
Orders complied with: written, 59; verbal, 17,	76	Moving-picture machine operators' licenses: renewed, 24,	24
Orders in process of compliance: written, 26,	26	Applicants to operate moving-picture machines examined: hand-driven, 5;	5
Moving-picture machine booths: inspected, 7; approved, 7,	7	licensed, 2; rejected, 3,	5

REPORT OF INSPECTOR RICHARD S. BEYER, DISTRICT No. 5.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Con- sulta- tions.	Changes inspected.	Construc- tion inspected.	Inspec- tions.	Visits.	Certifi- cates issued.	Heating and Ven- tilation inspected.	Approved.	Reported.
Theatres,	1	—	12	—	103	52	—	1	—	—
Special halls,	—	—	50	—	35	10	—	—	—	—
Public halls,	4	2	63	17	51	24	—	—	—	—
Miscellaneous halls,	5	—	78	7	98	40	29	—	—	—
Churches,	5	—	1	.5	10	3	2	—	—	—
Schools,	12	7	7	10	5	19	—	8	—	—
Hotels, lodging and boarding houses,	1	—	6	5	12	4	—	—	—	—
Apartment and tenement houses,	21	3	1	11	4	1	—	—	—	—
Industrial buildings,	10	—	2	4	—	3	—	—	—	—
Part industrial buildings,	2	2	—	2	—	—	—	—	—	—
Miscellaneous buildings,	9	2	17	11	4	40	—	—	—	—
Special permits for entertainments,	—	—	—	—	17	—	3	—	12	—
Cases and complaints investigated,	—	—	—	—	—	14	—	—	—	9
Special investigations,	—	—	—	—	—	39	—	—	—	—
Totals,	70	16	242	72	339	258	34	9	12	9

Miscellaneous Duties.

Orders issued: written, 77; verbal, 13,	.	.	.	.	.	.	.	90	Moving-picture machine booths: inspected, 6; approved, 6,	.	.	.	6
Orders complied with: written, 32; verbal, 13,	.	.	.	.	.	.	.	46	Moving-picture machines: inspected, 12; approved, 12,	.	.	.	12
Orders in process of compliance: written, 44,	.	.	.	.	.	.	.	44	Moving-picture machine operators' licenses: renewed, 4,	.	.	.	4

¹ Acting as supervisor of plans twelve days.

REPORT OF INSPECTOR WILLIAM J. MCKEEVER, DISTRICT NO. 6.

Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.				
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	—	3	—	4	97	46	—	—	—	—
Special halls,	2	7	4	10	35	39	—	—	—	—
Public halls,	1	8	3	9	57	41	—	—	—	—
Miscellaneous halls,	5	9	3	23	96	102	126	—	—	—
Churches,	13	5	—	20	110	114	46	—	—	—
Schools,	8	15	4	27	83	84	65	—	—	—
Hotels, lodging and boarding houses,	2	5	—	30	79	86	45	1	—	—
Apartment and tenement houses,	37	6	—	67	21	34	1	—	—	—
Industrial buildings,	12	12	2	31	7	22	8	—	—	—
Part industrial buildings,	1	1	1	4	3	6	—	—	—	—
Miscellaneous buildings,	11	17	7	46	49	68	11	—	—	—
Special permits for entertainments,	—	—	—	—	7	—	—	—	27	—
Cases and complaints investigated,	—	—	—	—	—	19	—	—	—	9
Special investigations,	—	—	—	—	—	36	—	—	—	—
Totals,	92	88	24	271	644	697	302	1	27	18

Miscellaneous Duties.

Orders issued: written, 150; verbal, 35,	191	Moving-picture machine booths: inspected, 12; approved, 12,	12
Orders complied with: written, 139; verbal, 26,	165	Moving-picture machines: inspected, 14; approved, 14,	14
Orders in process of compliance: written, 17; verbal, 9,	26	Moving-picture machine operators' licenses: renewed, 23,	23

REPORT OF INSPECTOR JOHN H. PLUNKETT, DISTRICT NO. 7.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Con- sulta- tions.	Changes inspected.	Construc- tion inspected.	Inspec- tions.	Visits.	Certi- ficates issued.	Heating and Ven- tilation inspected.	Approved.	Reported.
Theatres,	2	8	—	7	93	73	—	—	—	—
Special halls,	—	2	—	—	7	11	—	—	—	—
Public halls,	3	2	3	6	42	30	—	—	—	—
Miscellaneous halls,	4	6	—	8	109	144	108	—	—	—
Churches,	3	1	—	7	6	37	—	—	—	—
Schools,	2	3	3	2	33	64	39	—	—	—
Hotels, lodging and boarding houses,	—	—	—	2	68	90	26	—	—	—
Apartment and tenement houses,	5	5	2	31	13	33	3	—	—	—
Industrial buildings,	2	—	—	—	3	10	1	—	—	—
Part industrial buildings,	—	—	—	—	4	20	1	—	—	—
Miscellaneous buildings,	2	1	—	2	34	81	—	—	—	—
Special permits for entertainments,	—	—	—	—	4	5	—	—	4	—
Cases and complaints investigated,	—	—	—	—	—	8	—	—	—	—
Special investigations,	—	—	—	—	—	—	—	—	—	—
Totals,	23	23	8	65	416	606	178	—	4	4

Miscellaneous Duties.

Orders issued: written, 134; verbal, 28,	212	Moving-picture machines: inspected, 6; approved, 6,	6
Orders complied with: written, 112; verbal, 23,	135	Moving-picture machine operators' licenses: renewed, 25,	25
Orders in process of compliance: written, 72; ² verbal, 5, ²	77	Applicants to operate moving-picture machine examined: special, 1; licensed, 1,	1
Moving-picture machine booths: inspected, 4; approved, 4,	4		

¹ Appointed deputy chief Sept. 1, 1914.

² Referred to Inspector Terry.

REPORT OF INSPECTOR JOHN J. TERRY, DISTRICT NO. 7.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.		Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres.	1	1	-	-	-	22	7	-	-	-	-
Special halls.	-	-	-	-	-	-	3	-	-	-	-
Public halls.	-	-	-	-	-	3	7	-	-	-	-
Miscellaneous halls.	2	4	-	-	-	10	111	20	-	-	-
Churches.	2	-	-	1	-	1	14	-	-	-	-
Schools.	-	-	-	1	-	1	40	2	-	-	-
Hotels, lodging and boarding houses.	-	-	-	-	-	1	9	-	-	-	-
Apartment and tenement houses.	-	1	-	8	-	3	5	-	-	-	-
Industrial buildings.	1	-	-	1	-	-	2	-	-	-	-
Part industrial buildings.	1	-	-	3	-	-	19	1	-	-	-
Miscellaneous buildings.	-	-	-	2	-	-	9	-	-	-	-
Cases and complaints.	-	-	-	-	-	-	1	-	-	-	-
Special investigations.	-	-	-	-	-	-	4	-	-	-	-
Totals.	7	6	-	16	-	40	231	23	-	-	-

<i>Miscellaneous Duties.</i>			
Orders issued: written, 104; verbal, 23.	.	.	126
Orders complied with: written, 56; verbal, 4.	.	.	60
Orders in process of compliance: written, 48; verbal, 13.	.	.	66

Miscellaneous Duties.

Orders issued: written, 104; verbal, 22,	126	Moving-picture machine booths: inspected, 2; approved, 2,	2
Orders complied with: written, 56; verbal, 4,	60	Moving-picture machine operators' licenses: renewed, 6,	6
Orders in process of compliance: written, 48; verbal, 18,	66	Elevators: plan submitted, 1; approved, 1,	1

¹ Appointed Sept. 1, 1914.

REPORT OF INSPECTOR WILLIAM H. CAIRNS, DISTRICT No. 8.

Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	6	7	14	144	39	—	—	—	—
Special halls,	—	—	—	2	24	18	—	—	—	—
Public halls,	1	5	2	1	65	32	—	—	—	—
Miscellaneous halls,	5	8	14	31	140	106	140	—	—	—
Churches,	3	2	4	23	89	123	167	—	—	—
Schools,	10	12	2	35	29	42	31	7	—	—
Hotels, lodging and boarding houses,	4	4	12	35	68	87	71	—	—	—
Apartment and tenement houses,	15	32	37	78	25	33	25	—	—	—
Industrial buildings,	5	2	3	11	6	20	18	—	—	—
Part industrial buildings,	—	—	—	1	4	10	4	—	—	—
Miscellaneous buildings,	2	—	3	7	1	10	—	—	—	—
Special permits for entertainments,	—	—	—	—	4	—	—	—	4	—
Cases and complaints,	—	—	—	—	—	9	—	—	—	9
Special investigations,	—	—	—	—	—	40	—	—	—	—
Totals,	46	71	84	238	599	569	456	7	4	9

Miscellaneous Duties.

Orders issued: written, 174; verbal, 59,	233	Moving-picture machine booths: inspected, 8; approved, 8,	8
Orders complied with: written, 134; verbal, 52,	186	Moving-picture machine operators' licenses: renewed, 22,	22
Orders in process of compliance: written, 40; verbal, 7,	47	Applicants to operate moving-picture machines examined: limited, 1; licensed, 1,	1

REPORT OF INSPECTOR FRANK W. SAUNDERS, DISTRICT NO. 9.
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	23	12	16	156	28	16	1	—	—
Special halls,	3	6	3	—	15	3	12	—	—	—
Public halls,	1	11	9	10	35	8	25	—	—	—
Miscellaneous halls,	5	18	20	6	80	15	70	—	—	—
Churches,	3	9	1	5	6	1	3	—	—	—
Schools,	12	69	25	32	17	12	1	2	—	—
Hotels, lodging and boarding houses,	2	48	67	33	135	27	89	—	—	—
Apartment and tenement houses,	14	16	13	27	9	4	—	—	—	—
Industrial buildings,	3	26	—	9	2	1	—	—	—	—
Part industrial buildings,	3	10	2	12	—	3	—	—	—	—
Miscellaneous buildings,	8	36	19	52	2	34	—	—	2	—
Special permits for entertainments,	—	—	—	—	2	—	—	—	—	7
Cases and complaints investigated,	—	—	—	—	—	29	—	—	—	—
Special investigations,	—	—	—	—	—	50	—	—	—	—
Totals,	55	272	171	202	459	215	217	3	2	7

Miscellaneous Duties.

Orders issued: written, 122; verbal, 120,	242	Moving-picture machine booths: inspected, 13; approved, 13,	13
Orders complied with: written, 109; verbal, 108,	217	Moving-picture machine operators' licenses: renewed, 26,	26
Orders in process of compliance: written, 13; verbal, 12,	25	Moving-picture machine operators' assistants' permits: issued, 21,	21
Prosecutions made, 2; fines and cost paid, \$50.			

REPORT OF INSPECTOR HORACE F. BALL, DISTRICT No. 10.¹
Relating to the Erection, Alteration and Inspection of Buildings.

Buildings.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.				
	Plans received.	Consultations.	Changes inspected.	Construction inspected.		Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved. Reported.
Theatres,	2	-	-	-		5	1	-	-	-
Special halls,	5	-	-	-		1	3	-	-	-
Public halls,	4	-	-	-		-	1	-	-	-
Miscellaneous halls,	-	-	-	-		-	1	-	-	-
Churches,	-	-	-	-		1	-	-	-	-
Miscellaneous buildings,	-	-	-	-		1	-	-	-	-
Special permits for entertainments,	-	-	-	-		-	-	-	-	-
Totals,	11	-	-	-		8	5	-	-	1

Miscellaneous Duties.

None reported.

¹ Died Feb. 19, 1914.

REPORT OF INSPECTOR JOHN F. CASEY, DISTRICT NO. 10.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.				
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	-	-	30	57	11	-	-	-	-
Special halls,	1	-	-	-	15	7	-	-	-	-
Public halls,	2	-	-	12	26	33	-	-	-	-
Miscellaneous halls,	3	1	-	2	74	49	38	-	-	-
Churches,	3	-	-	1	26	8	14	-	-	-
Schools,	9	2	-	2	41	12	26	-	-	-
Hotels, lodging and boarding houses,	2	-	-	6	29	51	55	-	-	-
Apartment and tenement houses,	18	1	-	15	25	26	47	-	-	-
Industrial buildings,	11	1	-	11	110	60	287	-	-	-
Part industrial buildings,	3	1	1	1	19	4	15	-	-	-
Miscellaneous buildings,	2	1	-	6	16	30	56	-	-	-
Special permits for entertainments,	-	-	-	-	13	-	-	-	13	-
Totals,	55	7	1	86	451	296	538	-	13	-

Miscellaneous Duties.

Orders issued: written, 238,	238	Moving-picture machines: inspected, 8; approved, 8,	8
Orders complied with: written, 157,	157	Moving-picture machine operators' licenses: renewed, 8,	8
Orders in process of compliance: written, 81,	81	Moving-picture machine operators' assistants' permits: issued, 8,	8
Moving-picture machine booths: inspected, 6; approved, 6,	6	Elevators: inspected, 1,	1
Prosecutions made, 3; fines and costs, \$14.			

¹ Transferred from District No. 15, June 1, 1914.

REPORT OF INSPECTOR AMBROSE W. ISELE, DISTRICT NO. 11.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres.	—	3	2	2	73	13	—	—	—	—
Special halls,	1	—	—	—	10	7	—	—	—	—
Public halls,	2	12	4	—	30	21	—	—	—	—
Miscellaneous halls,	2	12	5	6	47	49	14	—	—	—
Churches,	1	—	—	—	1	—	—	—	—	—
Schools,	6	3	—	10	1	6	—	—	—	—
Hotels, lodging and boarding houses,	—	13	7	8	77	82	73	—	—	—
Apartment and tenement houses,	4	2	3	3	—	—	—	—	—	—
Industrial buildings,	5	9	6	16	41	34	23	—	—	—
Part industrial buildings,	—	—	—	—	—	7	—	—	—	—
Miscellaneous buildings,	8	23	7	10	10	17	—	—	2	—
Special permits for entertainments,	—	—	—	—	2	—	—	—	—	—
Cases and complaints investigated,	—	—	—	—	—	5	—	—	—	5
Special investigations,	—	—	—	—	—	2	—	—	—	—
Totals,	29	82	34	55	292	243	110	—	2	5

Miscellaneous Duties.

Orders issued: written, 123; verbal, 3,	126	Moving-picture machines: inspected, 5; approved, 5,	5
Orders complied with: written, 74; verbal, 3,	77	Moving-picture machine operators' licenses: renewed, 9,	9
Orders in process of compliance: written, 49,	49	Moving-picture machine operators' assistants' permits: issued, 9,	9
Moving-picture machine booths: inspected, 5; approved, 5,	5	Elevators: inspected, 2; certificates issued, 2,	2

¹ Appointed as building inspector, April 3, 1914.

REPORT OF INSPECTOR CHARLES ADAMS, DISTRICT NO. 11.¹
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.				
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	—	—	—	—	30	1	—	—	—	—
Special halls,	3	—	—	—	1	1	—	—	—	—
Public halls,	1	—	—	—	28	2	—	—	—	—
Miscellaneous halls,	—	—	—	—	20	2	15	—	—	—
Churches,	—	—	—	—	4	2	25	—	—	—
Schools,	1	—	—	—	14	5	10	—	—	—
Hotels, lodging and boarding houses,	1	—	—	—	19	14	50	—	—	—
Apartment and tenement houses,	3	—	—	—	—	2	—	—	—	—
Industrial buildings,	5	—	—	—	23	1	56	—	—	—
Part industrial buildings,	2	—	—	1	—	1	—	—	—	—
Miscellaneous buildings,	3	—	—	—	1	1	—	—	—	—
Special permits for entertainments,	—	—	—	—	—	—	—	—	1	—
Special investigations,	—	—	—	—	—	1	—	—	—	—
Totals,	19	—	—	1	141	33	156	—	1	—

Miscellaneous Duties.

Orders issued: written, 3,	3	Moving-picture machines: inspected, 1; approved, 1,	1
Orders complied with: written, 3,	3	Moving-picture machine operators' licenses: renewed, 4,	4

¹ Retired Feb. 1, 1914.

REPORT OF INSPECTOR WALTER A. PENNIMAN, DISTRICT No. 12.
Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.					RELATING TO EXISTING BUILDINGS.				
	Plans received	Con-sulta-tions.	Changes inspected.	Construc-tion inspected.	Inspec-tions.	Visits.	Certi-fi-cates issued.	Heating and Ven-tilation inspected.	Approved.	Reported.
Theatres	3	3	2	11	194	19	—	—	—	—
Special halls,	2	3	1	3	27	12	—	—	—	—
Public halls,	3	9	8	6	75	35	—	—	—	—
Miscellaneous halls,	3	9	1	7	147	40	94	—	—	—
Churches,	2	3	1	5	16	6	8	—	—	—
Schools,	3	5	5	5	36	10	85	—	—	—
Hotels, lodging and boarding houses,	5	10	13	5	130	60	264	—	—	—
Apartment and tenement houses,	14	2	5	13	3	1	—	—	—	—
Part industrial buildings,	8	9	4	6	133	34	244	—	—	—
Industrial buildings,	2	3	2	2	9	7	5	—	—	—
Miscellaneous buildings,	10	10	14	9	32	63	16	—	5	—
Special permits for entertainments,	—	—	—	—	6	—	—	—	—	—
Cases and complaints investigated,	—	—	—	—	—	5	—	—	—	4
Special investigations,	—	—	—	—	—	1	—	—	—	—
Totals,	55	66	56	72	808	293	716	—	5	4

Miscellaneous Duties.

Orders issued: written, 78; verbal, 12,	90	Moving-picture machines: inspected, 21; approved, 21,	21
Orders complied with: written, 59; verbal, 12,	71	Moving-picture operators' licenses: renewed, 36,	36
Orders in process of compliance: written, 19,	19	Elevators: inspected, 4; certificates issued, 2,	4
Moving-picture machine booths: inspected, 12; approved, 12,	12		

Prosecutions, 2; filed, 1; continued, 1.

REPORT OF INSPECTOR ERNEST E. CLEVELAND, DISTRICT NO. 13.

Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	4	2	9	154	73	—	—	—	—
Special halls,	1	2	1	2	12	14	—	—	—	—
Public halls,	1	2	2	8	28	66	—	—	—	—
Miscellaneous halls,	8	10	9	23	35	69	31	—	—	—
Churches,	2	2	2	7	4	7	5	—	—	—
Schools,	9	14	5	32	4	25	5	2	—	—
Hotels, lodging and boarding houses,	6	10	11	16	32	62	30	—	—	—
Apartment and tenement houses,	49	32	14	51	—	3	—	—	—	—
Industrial buildings,	7	6	6	15	—	25	3	—	—	—
Part industrial buildings,	3	2	3	6	7	8	2	—	—	—
Miscellaneous buildings,	3	2	2	4	7	5	2	—	—	—
Special permits for entertainments,	—	—	—	—	39	—	—	—	39	—
Cases and complaints investigated,	—	—	—	—	—	42	—	—	—	39
Totals,	90	86	57	173	315	399	76	2	39	39

Miscellaneous Duties.

Orders issued: written, 53; verbal, 102,	155	Moving-picture machine booths: inspected, 5; approved, 5,	5
Orders complied with: written, 58; verbal, 108,	166	Moving-picture machines: inspected, 12; approved, 12,	12
Orders in process of compliance: written, 39; verbal, 10,	49	Moving-picture operators' licenses: renewed, 37,	37

Prosecutions made, 2; fines and costs, \$25.

REPORT OF INSPECTOR ARTHUR F. ROACH, DISTRICT No. 14.

Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.			
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.
Theatres,	—	—	—	—	148	12	—	—
Special halls,	1	—	1	33	18	7	—	—
Public halls,	1	—	1	6	30	5	—	—
Miscellaneous halls,	—	—	28	23	111	46	111	—
Churches,	3	—	21	32	5	10	5	—
Schools,	8	—	4	69	6	8	6	—
Hotels, lodging and boarding houses,	—	—	8	20	62	12	60	—
Apartment and tenement houses,	19	—	5	64	—	1	—	—
Industrial buildings,	10	—	4	30	2	2	2	—
Part industrial buildings,	—	—	1	20	—	—	—	—
Miscellaneous buildings,	2	—	1	26	10	3	—	—
Special permits for entertainments,	—	—	—	—	—	30	—	10
Cases and complaints investigated,	—	—	—	—	—	5	—	—
Special investigations,	—	—	—	—	—	—	—	—
Totals,	50	—	74	323	392	141	184	10

Miscellaneous Duties.

Orders issued: written, 135; verbal, 53,	188	Moving-picture machine booths: inspected, 7; approved, 7,	7
Orders complied with: written, 99; verbal, 53,	152	Moving-picture machines: inspected, 12; approved, 12,	12
Orders in process of compliance: written, 26,	26	Moving-picture machine operators' licenses: renewed, 29,	29

REPORT OF INSPECTOR JOHN F. CASEY, DISTRICT NO. 15.¹*Relating to the Erection, Alteration and Inspection of Buildings.*

Buildings.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	5	1	2	116	30	-	2	-	-
Special halls,	-	-	-	-	1	1	-	-	-	-
Public halls,	-	-	1	3	9	14	-	-	-	-
Miscellaneous halls,	3	10	3	6	89	56	100	-	-	-
Churches,	3	-	1	8	41	53	77	-	-	-
Schools,	-	7	3	5	35	24	45	6	-	-
Hotels, lodging and boarding houses,	1	-	-	1	83	47	257	-	-	-
Apartment and tenement houses,	1	8	-	20	42	69	80	-	-	-
Industrial buildings,	3	-	-	6	154	16	413	-	-	-
Part industrial buildings,	5	1	1	1	23	12	53	-	-	-
Miscellaneous buildings,	-	2	-	-	10	12	27	-	-	-
Special permits for entertainments,	1	-	-	-	44	-	-	-	44	-
Special investigations,	-	-	-	-	-	3	-	-	-	-
Totals,	18	33	10	52	647	337	1,052	8	44	-

Miscellaneous Duties.

Orders issued: written, 224,	224	Moving-picture machines: inspected, 5; approved, 5,	5
Orders complied with: written, 135,	135	Moving-picture machine operators' licenses: renewed, 18,	18
Orders in process of compliance: written, 89,	89	Moving-picture machine operators' assistants' permits: issued, 7,	7
Moving-picture booths: inspected, 3; approved, 3,	3		

¹ Transferred to District No. 10, June 1, 1914.

REPORT OF INSPECTOR SYDNEY H. CLIFFE, DISTRICT No. 15.¹*Relating to the Erection, Alteration and Inspection of Buildings.*

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres,	1	1	—	—	85	31	—	—	—	—
Special halls,	—	—	—	2	17	18	—	—	—	—
Public halls,	—	2	—	4	21	15	—	—	—	—
Miscellaneous halls,	4	2	1	4	56	69	54	—	—	—
Churches,	1	2	1	3	41	90	62	—	—	—
Schools,	4	3	1	1	23	44	48	—	—	—
Hotels, lodging and boarding houses,	2	1	1	5	27	34	90	—	—	—
Apartment and tenement houses,	2	1	1	7	5	17	18	—	—	—
Industrial buildings,	1	—	—	4	—	31	19	—	—	—
Miscellaneous buildings,	2	2	—	14	2	51	10	—	—	—
Special permits for entertainments,	—	—	—	—	27	—	—	—	54	—
Special investigations,	—	—	—	—	—	30	—	—	—	—
Totals,	17	13	4	40	304	430	301	—	54	—

Miscellaneous Duties.

Orders issued: written, 127,	127	Moving-picture machines: inspected, 9; approved, 9,	9
Orders complied with: written, 73,	73	Moving-picture machine operators' licenses: renewed, 6,	6
Orders in process of compliance: written, 54,	54	Moving-picture machine operators' assistants' permits: issued, 16,	16
Moving-picture booths: inspected, 8; approved, 8,	8	Elevators: plans received, 1,	1

¹ Transferred from State Board of Labor and Industries May 1, 1914.

REPORT OF INSPECTOR EVERETT E. RYAN, SPECIAL DUTY.

Relating to the Erection, Alteration and Inspection of Buildings.

BUILDINGS.	RELATING TO THE ERECTION OF BUILDINGS.				RELATING TO EXISTING BUILDINGS.					
	Plans received.	Consultations.	Changes inspected.	Construction inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilation inspected.	Approved.	Reported.
Theatres.	-	-	-	-	1	2	-	1	-	-
Miscellaneous halls.	-	-	-	-	2	2	-	-	-	-
Churches.	-	-	-	-	-	3	-	-	-	-
Schools.	-	-	-	-	-	3	-	-	-	-
Hotels, lodging and boarding houses.	-	-	-	-	-	1	-	-	-	-
Industrial buildings.	-	-	-	-	-	7	-	-	-	-
Part industrial buildings.	-	-	-	-	-	3	-	-	-	-
Miscellaneous buildings.	-	-	-	-	-	5	-	-	-	-
Special permits for entertainments.	-	-	-	-	46	-	-	-	45	-
Cases and complaints investigated.	-	-	-	-	-	3	-	-	-	3
Special investigations.	-	-	-	-	-	196	-	-	-	-
Totals.	-	-	-	-	49	225	-	1	46	3

Miscellaneous Duties.

Orders issued: written, 1; verbal, 4, 5 Applicants to operate moving-picture machines licensed: special, 38; land-driven, 181; first class, 28; second class, 11; special limited, 1;¹ limited, 9, . . . 268

Orders complied with: written, 1; verbal, 4, 19 Applicants to operate moving-picture machines rejected: special, 6; hand-driven, 246; first class, 38; second class, 10; special limited, 2,¹ 302

Moving-picture machine booths: inspected, 19, 67

Moving-picture machines: inspected, 67; approved, 67, 151

Moving-picture operators' licenses: renewed, 151, 44

Applicants to operate moving-picture machines examined: special, 44; hand-driven, 427; first class, 66; second class, 21; special limited, 3; limited, 9, . . . 570

¹ Recommended, 1; refused to recommend, 2. Special limited licenses are granted by the Chief, upon recommendation of the examining inspector.

RECAPITULATION OF REPORTS OF BUILDING INSPECTORS.
Relating to the Supervision of Plans.

INSPECTORS.	Plans submitted.	Con- sulta- tions.	FORWARDED TO INSPECTORS.				Total forwarded.	Under Conside- ration.	Total filed.
			Specifi- cations.	Certifi- cates.	Without Action.	Construc- tion abandoned.			
Lemuel Pope, supervisor,	1,370	1,234	161	929	16	19	825	62	887
Richard S. Beyer, acting supervisor,	67	52	3	16	-	-	19	17	36
Totals,	1,437	1,286	164	945	16	19	844	79	923

Relating to the Erection, Alteration and Inspection of Buildings.

INSPECTORS.	RELATIVE TO THE ERECTION OF BUILDINGS.				RELATIVE TO EXISTING BUILDINGS.										ELEVATORS.	
	Plans received.	Consultations.	Changes inspected.	Constructions inspected.	Inspections.	Visits.	Certificates issued.	Heating and Ventilating inspected.	ORDERS.			Special Permits approved.	Cases and Complaints investigated.	Inspected.	Certificates issued.	
									Issued.	Complied with.	In Process of Compliance.					
Adams, Charles,	19	-	-	1	141	33	156	-	3	3	1	1	-	-	-	1
Atkinson, Harry,	3	-	-	-	68	528	19	-	11	9	36	5	-	-	-	1
Ball, Horace F.,	11	-	-	-	8	5	-	-	-	-	-	-	-	-	-	-
Beyer, Richard S.,	70	16	242	72	339	258	34	9	90	44	12	53	4	-	-	53
Cairns, William H.,	46	71	84	238	599	569	456	7	233	47	4	49	1	-	-	49
Carey, Jeremiah J.,	73	216	202	936	658	572	50	9	231	20	13	25	1	-	-	25
Casey, John F.,	73	40	11	138	1,098	633	1,590	8	462	292	57	3	1	-	-	3
Cheney, Ansel J.,	30	10	5	516	413	413	75	9	286	75	12	5	1	-	-	5
Cleveland, Ernest E.,	90	86	57	173	315	399	76	2	155	166	49	39	1	-	-	42
Cliffe, Sydney H.,	17	13	4	430	304	430	301	-	127	73	54	30	2	-	-	30
Isle, Ambrose W.,	29	82	34	55	292	243	110	-	126	77	49	2	2	-	-	7
Lewis, Elmer,	46	36	8	92	417	556	48	4	102	76	26	17	5	-	-	5
McDonald, Angus H.,	58	20	414	347	702	716	463	4	430	270	160	9	42	-	-	42
McKeever, William J.,	92	24	271	644	697	191	26	1	165	26	27	55	4	-	-	55
Penniman, Walter A.,	55	66	56	72	808	293	716	-	90	71	19	5	4	-	-	13
Plunkett, John H.,	23	28	8	65	416	606	178	-	212	135	77	4	13	-	-	35
Rauch, Arthur F.,	50	-	74	323	392	141	184	-	188	152	26	10	35	-	-	199
Ryan, Everett E.,	-	-	-	-	49	225	-	1	5	5	46	2	79	-	-	2
Standers, Frank W.,	55	272	171	202	459	215	217	3	242	217	25	2	2	-	-	79
Terry, John J.,	7	6	-	16	40	231	23	-	126	60	68	-	5	-	-	5
Totals,	847	1,054	1,454	3,202	8,265	7,763	4,925	57	3,370	2,478	942	351	659	12	9	10

Relating to the Operation of the Cinematograph and the Exhibition of Motion Pictures.

INSPECTORS.	Booth approved.	Machine approved.	Operator's License renewed.	Assistant's Permit issued.	APPLICANTS TO OPERATE EXAMINED.										Total examined.		
					SPECIAL.		HAND-DRIVEN.		FIRST CLASS.		SECOND CLASS.		SPECIAL LIMITED.			LIMITED.	
					Licensed.	Rejected.	Licensed.	Rejected.	Licensed.	Rejected.	Licensed.	Rejected.	Licensed.	Rejected.		Licensed.	Rejected.
Adams, Charles,	1	-	4	-	-	16	41	-	-	-	-	-	-	-	2	-	63
Atkinson, Harry,	30	43	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ball, Horace F.,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beyer, Richard S.,	6	12	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cairns, Wm. H.,	8	-	22	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Carey, Jeremiah J.,	6	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Casey, John F.,	9	13	26	15	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheney, Ansel J.,	5	7	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cleveland, Ernest E.,	5	12	37	16	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliffe, Sydney H.,	8	9	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-
Cleese, Ambrose W.,	5	5	9	9	-	-	-	-	-	-	-	-	-	-	-	-	-
Lewis, Elmer,	7	11	24	2	3	2	-	-	-	-	-	-	-	-	-	-	5
McDonald, Angus H.,	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McKeever, Wm. J.,	12	14	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Penniman, Walter A.,	12	21	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plunkett, John H.,	4	6	25	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Pope, Lemuel,	-	-	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roach, Arthur F.,	7	12	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ryan, Everett E.,	19	67	151	-	38	6	181	246	28	38	11	10	1	2	9	-	570
Saunders, Frank W.,	13	-	26	21	-	-	-	-	-	-	-	-	-	-	-	-	-
Terry, John J.,	2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals, . . .	167	253	729	20	43	6	199	290	28	38	11	10	1	2	12	-	640

Respectfully submitted,

JOHN H. PLUNKETT,
Deputy Chief.

BOILER INSPECTION DEPARTMENT.

GEORGE A. LUCK, *Deputy Chief.*

BOILER INSPECTION DEPARTMENT.

REPORT OF GEORGE A. LUCK, *Deputy Chief*.
OFFICE, 3 STATE HOUSE, BOSTON.

To the Chief of the District Police.

SIR: — The members of the boiler inspection department, consisting of the deputy chief and twenty-four inspectors, have continued the efficient enforcement of the engineers' and firemen's license law, the law governing the operation and inspection of steam boilers, the law relative to the licensing of operators of hoisting machinery when the motive power is mechanical and other than steam, the steam boiler rules formulated by the Board of Boiler Rules, and the air-tank regulations prescribed by such Board.

The engineers' and firemen's license law has been amended during the year by changing the word "flats" to "apartments" in section 78 of chapter 102 of the Revised Laws, and amendments thereto.¹

The steam boilers exempted from the provisions of the law governing the operation and inspection of steam boilers are boilers of railroad locomotives; motor road vehicles; boilers in private residences; boilers in public buildings and in apartment houses used solely for heating, and carrying pressures not exceeding 15 pounds per square inch, and having less than 4 square feet of grate surface; boilers of not more than 3 horse power; boilers used for horticultural and agricultural purposes exclusively; and boilers under the jurisdiction of the United States.

In accordance with the provisions of section 2, chapter

¹ This statute, chapter 451, Acts of 1914, will be found on page 177 of this report.

629, Acts of 1913, air-tank regulations were prescribed by the Board of Boiler Rules, the same being completed on Dec. 16, 1913; and as soon as printed, copies were furnished to those interested preliminary to the required air-tank inspections.

Chapter 629, Acts of 1913, was repealed by the enactment of chapter 127, Acts of 1914, which act was also repealed by the passage of chapter 649, Acts of 1914, being an act relative to the construction and inspection of tanks containing compressed air for use in operating pneumatic machinery.¹ The passage of this Act necessitated the revision of the air-tank regulations prescribed by the Board in accordance with section 2 of the Act, and such revised regulations read as follows:—

Regulations prescribed by the Board of Boiler Rules.

[In accordance with the provisions of chapter 649, Acts of 1914, "An Act relative to the construction and inspection of tanks containing compressed air for use in operating pneumatic machinery."]

PART I.—These regulations, in addition to the regulations contained in Part II., apply to tanks installed on or *before* June 9, 1914.

PART II.—These regulations apply to all tanks now or hereafter installed.

PART III.—These regulations, in addition to the regulations contained in Part II., apply to tanks installed *after* June 9, 1914, and to all new parts of any tank repaired after June 9, 1914.

PART I.

These regulations, in addition to the regulations contained in Part II., apply to tanks installed on or *before* June 9, 1914.

SECTION 1.

To determine Maximum Allowable Pressure.

1. The maximum pressure to be allowed on a steel or wrought-iron shell or drum of a tank shall be determined from the minimum thickness of the shell plates, the lowest tensile strength of the plates, the efficiency of the longitudinal joint, the inside diameter of the outside

¹ This statute will be found on page 180 of this report.

course and the lowest factor of safety allowed by these regulations, the formula being: —

$$\frac{T. S. \times t \times \%}{R. \times F. S.} = \text{maximum allowable working pressure per square inch, in pounds.}$$

T. S. = tensile strength of shell plates, in pounds.

t = minimum thickness of shell plates, in inches.

% = efficiency of longitudinal joint, method of determining which is given in section 4, Part II. of these regulations.

R = radius = one-half ($\frac{1}{2}$) the diameter of the outside course of the shell or drum.

F. S. = lowest factor of safety allowed by these regulations.

Tensile Strength.

2. When the tensile strength of steel or wrought-iron shell plates is *not* known, it shall be taken as fifty-five thousand (55,000) pounds for steel and forty-five thousand (45,000) pounds for wrought iron.

Factor of Safety.

3. The lowest factor of safety to be used for tanks, the longitudinal joints of which are of butt and double-strap construction, shall be five (5).

NOTE. — Factors of safety which also apply to tanks installed before June 9, 1914, are specified in paragraph 8, section 1, Part II. of these regulations.

Rivets.

4. When the diameter of the rivet holes in the longitudinal joints of a tank is *not* known, the diameter and cross-sectional area of rivets, after driving, shall be taken as follows: —

Thickness of plate,	$1\frac{1}{2}''$.25"	$9\frac{3}{8}''$.28125"	$5\frac{1}{8}''$.3125"	$11\frac{5}{16}''$.34375"	$3\frac{1}{4}''$.375"	$3\frac{1}{4}''$ up to and including $2\frac{1}{4}''$ pitch.	$13\frac{1}{16}''$ over $2\frac{1}{4}''$ pitch.	$3\frac{3}{8}''$.375"	$13\frac{5}{8}''$.40625"
Diameter of rivet after driving,	$11\frac{1}{16}''$	$11\frac{1}{16}''$	$3\frac{1}{4}''$	$3\frac{1}{4}''$	$3\frac{1}{4}''$				$13\frac{1}{16}''$
Cross-sectional area of rivet after driving, . . . . .	.3712 sq. in.	.3712 sq. in.	.4418 sq. in.	.4418 sq. in.	.4418 sq. in.	.4418 sq. in.	.5185 sq. in.	.5185 sq. in.	.5185 sq. in.

Thickness of plate,	$7\frac{1}{8}''$.4375"	$7\frac{1}{8}''$.4375"	$15\frac{3}{32}''$.46875"	$1\frac{1}{2}''$.5"	$9\frac{1}{16}''$.5625"	$5\frac{1}{8}''$.625"
Diameter of rivet after driving,	$7\frac{1}{8}''$ up to and including $2\frac{1}{4}''$ pitch.	$15\frac{1}{8}''$ over $2\frac{1}{4}''$ pitch.	$15\frac{1}{8}''$	$15\frac{1}{8}''$	$11\frac{1}{8}''$	$11\frac{1}{8}''$
Cross-sectional area of rivet after driving, . . . . .	.6013 sq. in.	.6903 sq. in.	.6903 sq. in.	.6903 sq. in.	.8866 sq. in.	.8866 sq. in.

PART II.

These regulations apply to *all tanks* now or hereafter installed.

SECTION 1.

Definition.

1. The word tank in these regulations refers to any receptacle used for storing compressed air, as stated in chapter 649, Acts of 1914, and includes intercoolers, aftercoolers and reheaters.

Maximum Pressure.

2. The maximum pressure allowed on any tank of a compressed air system, excepting intercoolers, shall not exceed the lowest pressure allowed on any tank in said system.

Bottom Drip Pipe.

3. Each tank shall have a bottom drip pipe, fitted with a valve or cock, in direct connection with the lowest water space practicable. The minimum size of pipe and fittings shall be three-fourths of an inch ($\frac{3}{4}$ "). Globe valves shall not be used. This valve or cock shall be opened once every day, or oftener, for the purpose of draining the accumulated water and oil from said tank.

Area of Discharge Nozzle not to be reduced.

4. The area of the air-compressor discharge nozzle shall not be reduced by pipe connections. Each tank connection from the compressor discharge shall have its proportional area, based on tank volume, and be connected with the least number of turns and fittings practicable.

Crushing Strength of Mild Steel.

5. The resistance to crushing of mild steel shall be taken at ninety-five thousand (95,000) pounds per square inch of cross-sectional area.

Shearing Strength of Rivets.

6. The maximum shearing strength of rivets per square inch of cross-sectional area shall be taken as follows:—

	Pounds.
Iron rivets in single shear,	38,000
Iron rivets in double shear,	70,000
Steel rivets in single shear,	42,000
Steel rivets in double shear,	78,000

7. The following table gives the allowable shearing strength of rivets from eleven-sixteenths inch ($\frac{11}{16}$ ") to one and one-sixteenth inches ($1\frac{1}{16}$ ") in diameter, in pounds:—

Diameter of rivet after driving,	. . . . .	11 $\frac{1}{16}$ " .6875"	3 $\frac{3}{4}$ " .75"	13 $\frac{1}{16}$ " .8125"	7 $\frac{7}{8}$ " .875"	15 $\frac{1}{16}$ " .9375"	11 $\frac{1}{16}$ " 1.0625"
Cross-sectional area of rivet after driving,	. . . . .	.3712 sq. in.	.4418 sq. in.	.5185 sq. in.	.6013 sq. in.	.6903 sq. in.	.8866 sq. in.
Allowable Shearing Strength, in Pounds.							
Iron, single shear,	. . . . .	14,106	16,788	19,703	22,849	26,231	33,691
Iron, double shear,	. . . . .	25,984	30,926	36,295	42,091	48,321	62,062
Steel, single shear,	. . . . .	15,590	18,556	21,777	25,255	28,993	37,237
Steel, double shear,	. . . . .	28,954	34,460	40,443	46,901	53,843	69,155

8. The lowest factors of safety used for tanks, the longitudinal joints of which are of lap-riveted construction, shall be as follows:—

(a) Five (5) for tanks not over ten (10) years old.

(b) Five and five-tenths (5.5) for tanks over ten and not over fifteen (15) years old.

(c) Five and seventy-five one hundredths (5.75) for tanks over fifteen and not over twenty (20) years old.

(d) Six (6) for tanks over twenty (20) years old.

WARNING. EXPLOSIONS IN AIR COMPRESSORS AND RECEIVERS.

9. Explosions in air compressors and receivers occur with sufficient frequency to demand careful attention.

The majority of such explosions are undoubtedly due, either directly or indirectly, to the lubricating oil used in the air cylinders. Poor working conditions of the compressor, such as leaking valves, hot and dirty inlet air, insufficient cooling water, carbon deposit in cylinder or connections, and high speeds of poorly designed compressors, all assist in producing dangerously high temperatures of the compressed air. These high temperatures are sufficient to ignite the volatile constituents of the lubricating oil, and produce violent explosions; therefore, —

(a) Keep the temperature of the compressed air, during compression, as low as possible.

(b) Keep the piston and valves tight, and in good working condition.

(c) Take the inlet air from as cool and clean a location as practicable.

(d) Use plenty of cold water, from a source which is not liable to fail, and have it visible at discharge from cylinders or coolers.

(e) Do not use kerosene or other volatile substances in the cylinder, tanks or any connections.

(f) Use mechanical or sight feed oilers for the compressor cylinder.

(g) Use the least amount practicable of the best air cylinder oil. Air cylinders require much less oil than steam cylinders.

(h) Keep the cylinder, tanks and connections as free from carbon, accumulated oil and deposits as practicable.

(i) A good cylinder oil is one which lubricates well, leaves little or no deposit, is the least volatile at high temperatures, and has a high flash point.

SECTION 2.

Safety Valves.

1. Every air-compressor system shall have one or more safety valves of the direct spring-loaded type, installed on the discharge pipe as near the compressor cylinder as practicable.

2. Safety valves installed on air-compressor systems shall not exceed three (3) inches in diameter, and shall be of the direct spring-loaded type, with seat and bearing surface of the disc inclined at an

angle of about forty-five (45) degrees, or about ninety (90) degrees to the center line of the spindle; designed with a substantial lifting device so that the disc can be lifted from its seat with the spindle, not less than one-eighth the diameter of the valve, when the pressure on the tank is seventy-five (75) per cent. of that at which the safety valve is set to blow.

3. Safety valves having either the seat or disc of cast iron shall not be used.

4. If more than one safety valve is used on any air-compressor system, the discharge capacity shall be taken as the combined capacity of all said valves.

Safety Valve Connections.

5. Each safety valve shall have full-sized direct connection to an air-compressor system. When an escape pipe is used, it shall be full-sized and fitted with an open drain, to prevent water from lodging in the upper part of the safety valve or escape pipe. When two (2) or more safety valves are placed on one (1) connection, this connection shall have a cross-sectional area equal to or greater than the combined area of these safety valves. No valve of any description shall be placed between the safety valve and the compressor nor on the escape pipe between the safety valve and the atmosphere. When an elbow is placed on a safety valve escape pipe it shall be located close to the safety valve outlet, or the escape pipe shall be securely anchored and supported.

Valve Drains.

6. Every safety valve which is exposed to 32° Fahrenheit, or less, shall have a drain at least three-eighths ($\frac{3}{8}$) inch in diameter at the lowest point where water can collect, to prevent freezing.

Safety Valve Springs.

7. Safety valve springs shall not be adjusted to carry more than ten (10) per cent. greater pressure than that for which the springs were made.

Tests of Safety Valves.

8. Each safety valve shall be tested once every day, or oftener, by raising the disc from its seat.

Minimum Size of Direct Spring-loaded Safety Valves.

9. The minimum size of a direct spring-loaded safety valve shall be governed by the pressure allowed as stated in the certificate of inspection, and by the maximum commercial rating of the air compressor in cubic feet per minute, as stated in paragraphs 10, 11, 12, 13 and 14 of this section.

Air Compressor Capacity.

10. The maximum commercial capacity, in cubic feet per minute, of any air compressor at sea level shall have a capacity for different altitudes as stated in the following table:—

ALTITUDE (FEET).	Capacity (Per Cent.).	ALTITUDE (FEET).	Capacity (Per Cent.).
Sea level,	100	3,000,	90
1,000,	97	4,000,	87
2,000,	93	5,000,	84

Maximum Commercial Rating.

11. The maximum commercial rating (sea-level pressure and 60° Fahrenheit) of any air compressor shall be the piston displacement in cubic feet per minute at the maximum speed of said air compressor, as given in the catalogue of the manufacturer.

Safety Valve Capacity.

12. Safety valves connected to an air-compressor system shall have, when adjusted to give the minimum discharge area for satisfactory operation, a capacity capable of discharging a quantity of air at least equal to twenty-five (25) per cent. excess of the maximum rating of the air compressors operating on said system, without the air pressure rising over five (5) per cent. of the allowable pressure.

Determining Safety Valve Sizes.

13. If the actual discharge capacity, by paragraph 13 of this section, is not known, the following table shall be used for determining safety valve sizes:—

The foregoing table is based on the following formulæ: —

$Q = 28 P D l$ for 45° bevel-seat valves,
and

$Q = 40 P D l$ for flat-seat valves.

Q = discharge in cubic feet of free air per minute, which must be at least 25% in excess of the maximum commercial ratings of the air compressors.

P = absolute pressure at which the safety valve opens, and is 14.7 (at sea level) plus the gage pressure.

D = diameter, in inches, of the inside edge of the bearing surface between the disc and seat.

l = vertical lift of the safety valve disc from its seat, in inches, and shall be the lift for minimum discharge capacity, for satisfactory operation of the valve.

Discharge Capacity of Safety Valves.

14. The discharge capacity of safty valves on any air-compressor system shall be governed by the pressure allowed on said system, as stated in the certificate of inspection, and with a temperature of air entering said valve of 450° Fahrenheit. The discharge capacity at any other temperature shall vary indirectly as the square root of the absolute temperature (\sqrt{T}). The absolute temperature shall be taken as 460°, plus the observed temperature.

Fusible Plug.

15. There shall be placed a fusible plug as near as practicable, after every air compressor, and at the highest point of every tank which receives air directly from an air compressor without any intervening tank.

Fusible Metal.

16. Fusible plugs shall be filled with a fusible metal which shall melt when the temperature of the air, in the space in which said fusible plug is located, reaches five hundred (500) degrees Fahrenheit. The fusible plug shall be of such construction as to give warning when the fusible metal melts. When such warning is given, it indicates a dangerous operating condition; and such condition shall be investigated and remedied immediately. Whoever desires to manufacture such fusible plugs for air-compressor systems shall submit to this Board, for approval, a specimen fusible plug stamped with the words MASS STD and the initials of the manufacturer.

Pressure Gage.

17. Every air-compressor system shall have a pressure gage connected by a brass siphon, or equivalent device, made of noncorrosive material, sufficiently large to fill the gage tube with water, and in such manner that the pressure gage cannot be shut off from the tank, except

by a cock with a T or lever handle, which shall be placed on the pipe near the pressure gage.

Connection to gages shall be made of brass pipe and fittings from the tank to the gage.

Pressure Gage Dial.

18. The dial of the pressure gage shall be graduated to not less than one and one-half ($1\frac{1}{2}$) times the maximum pressure allowed on the tank.

Test Gage Connection.

19. Each air-compressor system shall be provided with a one-fourth ($\frac{1}{4}$) inch pipe size connection for attaching inspector's gage when said system is in service, so that the accuracy of the pressure gage can be ascertained.

Handholes and Manholes.

20. All air tanks 12" to 20" in diameter, inclusive, shall have a $2\frac{1}{4}" \times 3\frac{1}{2}"$ handhole in the shell, as near each head as practicable, excepting tanks having bolted blank flange heads. A variation of one-quarter inch ($\frac{1}{4}"$) from these dimensions will be allowed.

All air tanks over twenty inches (20") in diameter shall have a four by six inch ($4" \times 6"$) handhole in the shell, as near each head as practicable, or have an eleven by fifteen inch ($11" \times 15"$) manhole.

All air tanks less than twelve inches (12") in diameter, may be inspected through the pipe connections, unless they have bolted blank flange heads.

SECTION 3.

Owner to prepare Tank for Inspection.

1. The owner or user of an air tank or air-compressor system herein required to be inspected, shall prepare the same for inspection, and shall remove covering if requested by the inspector. The inspector shall thoroughly examine every part of the system, both internally and externally.

2. If a tank has not been properly cooled down, or otherwise prepared for inspection, the inspector shall decline to inspect it; and he shall not issue a certificate of inspection until after thorough inspection shall have been made.

3. All proper measurements shall be taken by the inspector, so that the maximum working pressure allowed on a tank will conform to the regulations relating to allowable pressures established by the Board of Boiler Rules; such measurements to be taken, and calculations made, before a hydrostatic pressure test is applied to a tank.

4. The pressure gage of an air-compressor system shall be tested, and its readings compared with an accurate test gage; and if, in the judgment of the inspector, the gage is not reliable, he shall order it repaired or replaced.

SECTION 4.

Efficiency of Joint.

1. The efficiency that a unit of length of a riveted joint has, to the same unit of length of solid plate, shall be calculated as shown by the following examples: —

T. S. = tensile strength of plate, in pounds per square inch.

t = thickness of plate, in inches.

b = thickness of butt strap, in inches.

P = pitch of rivets, in inches, on row having greatest pitch.

d = diameter of rivet after driving, in inches.

a = cross-sectional area of rivet after driving, in square inches.

s = strength of rivet in single shear, as given in paragraph 6, section 1, Part II. of these regulations.

S = strength of rivet in double shear, as given in paragraph 6, section 1, Part II. of these regulations.

c = crushing strength of mild steel, as given in paragraph 5, section 1, Part II. of these regulations.

NOTE. — "c" applies only to tanks constructed after June 9, 1914.

n = number of rivets in single shear in a unit of length of joint.

N = number of rivets in double shear in a unit of length of joint.

Lap Single-riveted.

2. *Example.* — Lap joint, longitudinal or circumferential, single-riveted.

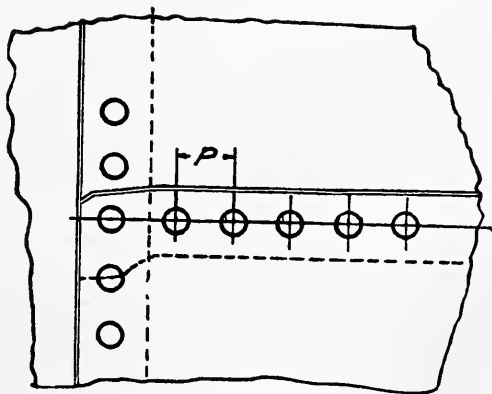


FIG. 1.

A = Strength of solid plate = $P \times t \times T. S.$

B = Strength of plate between rivet holes = $(P - d) t \times T. S.$

C = Shearing strength of one rivet in single shear = $n \times s \times a.$

D = Crushing strength of plate in front of one (1) rivet = $d \times t \times c.$

Divide B, C or D (whichever is the least) by A, and the quotient will be the efficiency of a single-riveted lap joint, as shown in Fig. 1.

$$T. S. = 55,000 \text{ pounds.}$$

$$t = \frac{1}{4}'' = .25''.$$

$$P = 1\frac{5}{8}'' = 1.625''.$$

$$d = \frac{11}{16}'' = .6875''.$$

$$a = .3712 \text{ square inches.}$$

$$s = 42,000 \text{ pounds.}$$

$$c = 95,000 \text{ pounds.}$$

$$A = 1.625 \times .25 \times 55,000 = 22,343.$$

$$B = (1.625 - .6875) \times .25 \times 55,000 = 12,890.$$

$$C = 1 \times 42,000 \times .3712 = 15,590.$$

$$D = .6875 \times .25 \times 95,000 = 16,328.$$

$$\frac{12,890 (B)}{22,343 (A)} = .576, \text{ Efficiency of joint.}$$

Lap Double-riveted.

3. *Example.* — Lap joint, longitudinal or circumferential, double-riveted.

A = Strength of solid plate = $P \times t \times T. S.$

B = Strength of plate between rivet holes = $(P - d) t \times T. S.$

C = Shearing strength of two (2) rivets in single shear = $n \times s \times a.$

D = Crushing strength of plate in front of two (2) rivets = $n \times d \times t \times c.$

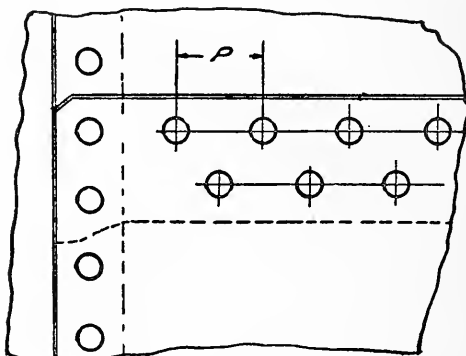


FIG. 2.

Divide B, C or D (whichever is the least) by A, and the quotient will be the efficiency of a double-riveted lap joint, as shown in Fig. 2.

$$T. S. = 55,000 \text{ pounds.}$$

$$t = \frac{5}{16}'' = .3125''.$$

$$P = 2\frac{7}{8}'' = 2.875''.$$

$$d = \frac{3}{4}'' = .75''.$$

$$a = .4418 \text{ square inches.}$$

$$s = 42,000 \text{ pounds.}$$

$$c = 95,000 \text{ pounds.}$$

$$A = 2.875 \times .3125 \times 55,000 = 49,414.$$

$$B = (2.875 - .75) \times .3125 \times 55,000 = 36,523.$$

$$C = 2 \times 42,000 \times .4418 = 37,111.$$

$$D = 2 \times .75 \times .3125 \times 95,000 = 44,531.$$

$$\frac{36,523 (B)}{49,414 (A)} = .739, \text{ Efficiency of joint.}$$

Butt Double-riveted.

4. *Example.* — Butt and double strap joint, double-riveted.

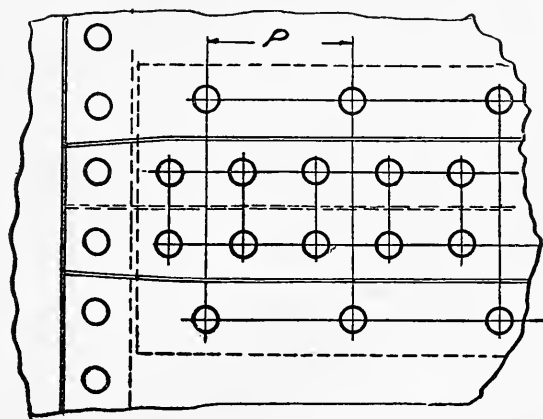


FIG. 3.

A = Strength of solid plate = $P \times t \times T. S.$

B = Strength of plate between rivet holes in the outer row = $(P - d)t \times T. S.$

C = Shearing strength of two (2) rivets in double shear, plus the shearing strength of one (1) rivet in single shear = $N \times S \times a + n \times s \times a.$

D = Strength of plate between rivet holes in the second row, plus the shearing strength of one (1) rivet in single shear in the outer row = $(P - 2d)t \times T. S. + n \times s \times a.$

E = Strength of plate between rivet holes in the second row, plus the crushing strength of butt strap in front of one (1) rivet in the outer row = $(P - 2d)t \times T. S. + d \times b \times c.$

F = Crushing strength of plate in front of two (2) rivets, plus the crushing strength of butt strap in front of one (1) rivet = $N \times d \times t \times c + n \times d \times b \times c.$

G = Crushing strength of plate in front of two (2) rivets, plus the shearing strength of one (1) rivet in single shear = $N \times d \times t \times c + n \times s \times a.$

Divide B, C, D, E, F or G (whichever is the least) by A, and the quotient will be the efficiency of a butt and double strap joint, double-riveted, as shown in Fig. 3.

T. S. = 55,000 pounds.	$a = .6013$ square inches.
$t = \frac{3}{8}'' = .375''$.	$s = 42,000$ pounds.
$b = \frac{5}{16}'' = .3125''$.	$S = 78,000$ pounds.
$P = 4\frac{7}{8}'' = 4.875''$.	$c = 95,000$ pounds.
$d = \frac{7}{8}'' = .875''$.	

Number of rivets in single shear in a unit of length of joint = 1.

Number of rivets in double shear in a unit of length of joint = 2.

$$A = 4.875 \times .375 \times 55,000 = 100,547.$$

$$B = (4.875 - .875) \times .375 \times 55,000 = 82,500.$$

$$C = 2 \times 78,000 \times .6013 + 1 \times 42,000 \times .6013 = 119,057.$$

$$D = (4.875 - 2 \times .875) \times .375 \times 55,000 + 1 \times 42,000 \times .6013 = 89,708.$$

$$E = (4.875 - 2 \times .875) \times .375 \times 55,000 + .875 \times .3125 \times 95,000 = 90,429.$$

$$F = 2 \times .875 \times .375 \times 95,000 + .875 \times .3125 \times 95,000 = 88,320.$$

$$G = 2 \times .875 \times .375 \times 95,000 + 1 \times 42,000 \times .6013 = 87,599.$$

$$\frac{82,500 (B)}{100,547 (A)} = .820, \text{ Efficiency of joint.}$$

Butt Triple-riveted.

5. *Example.* — Butt and double strap joint, triple-riveted.

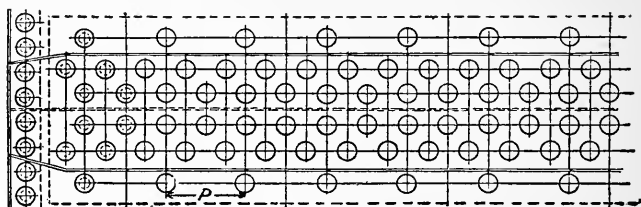


FIG. 4.

A = Strength of solid plate = $P \times t \times T. S.$

B = Strength of plate between rivet holes in the outer row = $(P - d)t \times T. S.$

C = Shearing strength of four (4) rivets in double shear, plus the shearing strength of one (1) rivet in single shear = $N \times S \times a + n \times s \times a.$

D = Strength of plate between rivet holes in the second row, plus the shearing strength of one (1) rivet in single shear in the outer row = $(P - 2d)t \times T. S. + n \times s \times a.$

E=Strength of plate between rivet holes in the second row, plus the crushing strength of butt strap in front of one (1) rivet in the outer row = $(P-2d)t \times T. S. + d \times b \times c$.

F=Crushing strength of plate in front of four (4) rivets, plus the crushing strength of butt strap in front of one (1) rivet = $N \times d \times t \times c + n \times d \times b \times c$.

G=Crushing strength of plate in front of four (4) rivets, plus the shearing strength of one (1) rivet in single shear = $N \times d \times t \times c + n \times s \times a$.

Divide B, C, D, E, F or G (whichever is the least) by A, and the quotient will be the efficiency of a butt and double strap joint, triple-riveted, as shown in Fig. 4.

T. S. = 55,000 pounds.

a = .5185 square inches.

$t = \frac{3}{8}'' = .375''$.

s = 42,000 pounds.

$b = \frac{5}{16}'' = .3125''$.

S = 78,000 pounds.

$P = 6\frac{1}{2}'' = 6.5''$.

c = 95,000 pounds.

$d = 1\frac{3}{8}'' = .8125''$.

Number of rivets in single shear in a unit of length of joint = 1.

Number of rivets in double shear in a unit of length of joint = 4.

$$A = 6.5 \times .375 \times 55,000 = 134,062.$$

$$B = (6.5 - .8125) \times .375 \times 55,000 = 117,304.$$

$$C = 4 \times 78,000 \times .5185 + 1 \times 42,000 \times .5185 = 183,549.$$

$$D = (6.5 - 2 \times .8125) \times .375 \times 55,000 + 1 \times 42,000 \times .5185 = 122,323.$$

$$E = (6.5 - 2 \times .8125) \times .375 \times 55,000 + .8125 \times .3125 \times 95,000 = 124,667.$$

$$F = 4 \times .8125 \times .375 \times 95,000 + 1 \times .8125 \times .3125 \times 95,000 = 139,902.$$

$$G = 4 \times .8125 \times .375 \times 95,000 + 1 \times 42,000 \times .5185 = 137,558.$$

$$\frac{117,304 (B)}{134,062 (A)} = .875, \text{ Efficiency of joint.}$$

Butt Quadruple-riveted.

6. *Example.* — Butt and double strap joint, quadruple-riveted.

A=Strength of solid plate = $P \times t \times T. S.$

B=Strength of plate between rivet holes in the outer row = $(P-d)t \times T. S.$

C=Shearing strength of eight (8) rivets in double shear, plus the shearing strength of three (3) rivets in single shear = $N \times s \times a + n \times s \times a$.

D=Strength of plate between rivet holes in the second row, plus the shearing strength of one (1) rivet in single shear in the outer row = $(P-2d)t \times T. S. + n \times s \times a$.

E=Strength of plate between rivet holes in the third row, plus the shearing strength of two (2) rivets in the second row in single shear and one (1) rivet in single shear in the outer row = $(P-4d)t \times T. S. + n \times s \times a$.

F=Strength of plate between rivet holes in the second row, plus the crushing strength of butt strap in front of one (1) rivet in the outer row = $(P-2d)t \times T. S. + d \times b \times c$.

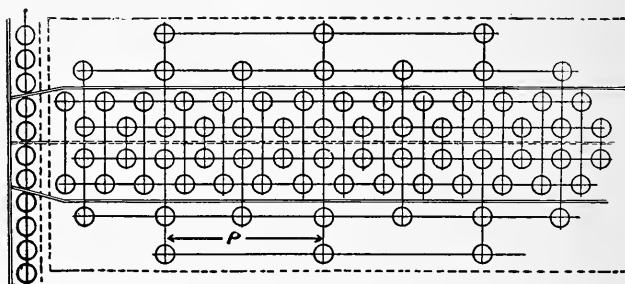


FIG. 5.

G=Strength of plate between rivet holes in the third row, plus the crushing strength of butt strap in front of two (2) rivets in the second row and one (1) rivet in the outer row = $(P-4d)t \times T. S. + n \times d \times b \times c$.

H=Crushing strength of plate in front of eight (8) rivets, plus the crushing strength of butt strap in front of three (3) rivets = $N \times d \times t \times c + n \times d \times b \times c$.

I=Crushing strength of plate in front of eight (8) rivets, plus the shearing strength of two (2) rivets in the second row and one (1) rivet in the outer row, in single shear = $N \times d \times t \times c + n \times s \times a$.

Divide B, C, D, E, F, G, H or I (whichever is the least) by A, and the quotient will be the efficiency of a butt and double strap joint quadruple-riveted, as shown in Fig. 5.

T. S. = 55,000 pounds.

$a = .6903$ square inches.

$t = \frac{1}{2}'' = .5''$.

$s = 42,000$ pounds.

$b = \frac{7}{16}'' = .4375''$.

$S = 78,000$ pounds.

$P = 15''$.

$c = 95,000$ pounds.

$d = \frac{15}{16}'' = .9375''$.

Number of rivets in single shear in a unit of length of joint = 3.

Number of rivets in double shear in a unit of length of joint = 8.

$$A = 15 \times .5 \times 55,000 = 412,500.$$

$$B = (15 - .9375) .5 \times 55,000 = 386,718.$$

$$C = 8 \times 78,000 \times .6903 + 3 \times 42,000 \times .6903 = 517,723.$$

$$D = (15 - 2 \times .9375) .5 \times 55,000 + 1 \times 42,000 \times .6903 = 389,930.$$

$$E = (15 - 4 \times .9375) .5 \times 55,000 + 3 \times 42,000 \times .6903 = 396,353.$$

$$F = (15 - 2 \times .9375) .5 \times 55,000 + .9375 \times .4375 \times 95,000 = 399,902.$$

$$G = (15 - 4 \times .9375) .5 \times 55,000 + 3 \times .9375 \times .4375 \times 95,000 = 426,269.$$

$$H = 8 \times .9375 \times .5 \times 95,000 + 3 \times .9375 \times .4375 \times 95,000 = 473,145.$$

$$I = 8 \times .9375 \times .5 \times 95,000 + 3 \times 42,000 \times .6903 = 443,229.$$

$$\frac{386,718 (B)}{412,500 (A)} = .937, \text{ Efficiency of joint.}$$

SECTION 5.

Form of Certificate.

1. The standard size of the certificate of inspection, as authorized by section 1, chapter 649, Acts of 1914, shall be eleven (11) inches in width and eight and one-half ($8\frac{1}{2}$) inches in length, and shall be made up and worded in accordance with the following copy; space having been provided for the insertion of the State Boiler Inspection Department or the name of the insurance company using the same: —

Commonwealth of Massachusetts
BIENNIAL CERTIFICATE
OF
AIR TANK INSPECTION
As required by Chapter 629, Acts of 1913

[SPACE FOR COMPANY'S NAME OR STATE BOILER INSPECTION DEPARTMENT]

Tank No. _____

Date of Inspection _____ 19

This is to Certify that the herein-described air tank inspected by

[SPACE FOR COMPANY'S NAME OR STATE BOILER INSPECTION DEPARTMENT]

may be operated at a **Pressure not to exceed** _____ **pounds per square inch.**

Name of owner _____	Type of tank _____
Location of tank _____	
Age in years _____	Built by _____
Length of shell or drum _____ ft. _____ in.	Diameter of shell or drum _____ in.
Lowest tensile strength of shell plates _____ lbs. per sq. in.	Number and size of tubes _____
Thickness of shell plates _____ in.	Thickness of heads _____ in.
Style of longitudinal joint in shell or drum _____	
Percentage of strength of longitudinal joint _____	Location of fusible plug _____

[COMPANY'S NAME OR STATE BOILER INSPECTION DEPARTMENT]

Signature _____

[PLACE SIGNATURE OF EXECUTIVE OFFICER'S OR CHIEF INSPECTOR'S SIGNATURE HERE]
(OFFICE)

Inspector of Boilers

In accordance with Section 2, Chapter 629, Acts of 1913, notify this Department at once if any defect is discovered.

POST UNDER GLASS IN CONSPICUOUS PLACE NEAR THE AIR COMPRESSOR

Certificate not to be removed.

2. The certificate of inspection shall be posted under glass in a conspicuous place in the air-compressor room near which the tank specified therein is located; and it shall not be removed therefrom unless the tank or its appendages become defective or a new certificate is issued, when it shall be removed by a member of the boiler inspection department of the district police, or an inspector employed by an insurance company as provided by section 1, chapter 649, Acts of 1914.

Air Tanks of a Steam-boiler Type.

3. When air tanks of a steam boiler type are used, all the rules formulated by the Massachusetts Board of Boiler Rules for boiler construction shall also apply to air-compressor systems, unless otherwise stated.

Stayed Surfaces.

4. All rules, formulated by the Board of Boiler Rules, which apply to stayed surfaces of steam boilers, shall also apply to air tanks.

Location of Tanks.

5. All air tanks installed or relocated after June 9, 1914, shall be located in such a position that an inspector can get all around and under said tanks for purposes of inspection.

Cast-iron Fittings.

6. Manufacturers' standard 125-pound cast-iron fittings will be allowed on tanks made of commercial wrought iron or steel pipe, pressure not exceeding one hundred ten (110) pounds per square inch, and diameters not exceeding fifteen inches (15").

Shell Plates.

7. Shells of air tanks not exceeding fifteen inches (15") diameter may be of commercial wrought iron or steel pipe, provided it meets the requirements of paragraphs 1 and 7, section 4, part III. Steel pipe may be taken as 55,000, and wrought iron pipe as 45,000 pounds per square inch tensile strength.

Fifty per cent. (50%) efficiency will be allowed on welded joints made by the forging process.

PART III.

These regulations, in addition to the regulations contained in Part II., apply to tanks installed *after* June 9, 1914, and to all new parts of any tank repaired after June 9, 1914.

SECTION 1.

*Open-Hearth Boiler Plate and Rivet Steel.**Process.*

1. Steel shall be made by the open-hearth process, and will be considered as manufactured by the basic method unless the report of test states that the acid method has been used.

Steel Plates and Rivets.

2. All plates and rivets used in the construction of steel shells or drums of tanks shall be as specified by the American Society for Testing Materials, adopted 1901.

*Chemical Properties.**Chemical Properties.*

3. There shall be three classes of open-hearth boiler plate and rivet steel, namely, Flange or Boiler Steel, Fire-box Steel and Extra Soft Steel, which shall conform to the following limits in chemical composition: —

	Flange or Boiler Steel (Per Cent.).	Fire-Box Steel (Per Cent.).	Extra Soft Steel (Per Cent.).
Phosphorus shall not exceed, {	Acid, 0.06	Acid, 0.04	Acid, 0.04
	Basic, 0.04	Basic, 0.03	Basic, 0.04
Sulphur shall not exceed,	0.05	0.04	0.04
Manganese,	0.30 to 0.60	0.30 to 0.50	0.30 to 0.50

Tank Rivet Steel.

4. Steel for tank rivets shall be of the Extra Soft class, as specified in paragraphs 3 and 5 of this section.

*Physical Properties.**Physical Properties.*

5. The three classes of open-hearth boiler plate and rivet steel — namely, Flange or Boiler Steel, Fire-box Steel and Extra Soft Steel — shall conform to the following physical qualities: —

	Flange or Boiler Steel.	Fire-Box Steel.	Extra Soft Steel.
Tensile strength, pounds per square inch,	55,000 to 65,000	52,000 to 63,000	45,000 to 55,000
Yield point, in pounds per square inch, shall not be less than,	$\frac{1}{2}$ T. S.	$\frac{1}{2}$ T. S.	$\frac{1}{2}$ T. S.
Elongation per cent. in 8 inches shall not be less than,	25	26	28

Modifications in Elongation for Thin and Thick Material.

6. For material less than five-sixteenths ($\frac{5}{16}$) inch and more than three-fourths ($\frac{3}{4}$) inch in thickness the following modifications shall be made in the requirements for elongation:—

(a) For each increase of one-eighth ($\frac{1}{8}$) inch in thickness above three-fourths ($\frac{3}{4}$) inch a deduction of one (1) per cent. shall be made from the specified elongation.

(b) For each decrease of one-sixteenth ($\frac{1}{16}$) inch in thickness below five-sixteenths ($\frac{5}{16}$) inch a deduction of two and one-half ($2\frac{1}{2}$) per cent. shall be made from the specified elongation.

Bending Tests.

7. The three classes of open-hearth air tank plate and rivet steel shall conform to the following bending tests; and for this purpose the test specimen shall be one and one-half ($1\frac{1}{2}$) inches wide, if possible, and for all material three-fourths ($\frac{3}{4}$) inch or less in thickness the test specimen shall be of the same thickness as that of the finished material from which it is cut, but for material more than three-fourths ($\frac{3}{4}$) inch thick the bending test specimen may be one-half ($\frac{1}{2}$) inch thick.

Rivet rounds shall be tested of full size as rolled.

(c) Test specimens cut from the rolled material, as specified above, shall be subjected to a cold bending test and also to a quenched bending test. The cold bending test shall be made on the material in the condition in which it is to be used, and prior to the quenched bending test the specimen shall be heated to a light cherry red, as seen in the dark, and quenched in water, the temperature of which is between 80° and 90° Fahrenheit.

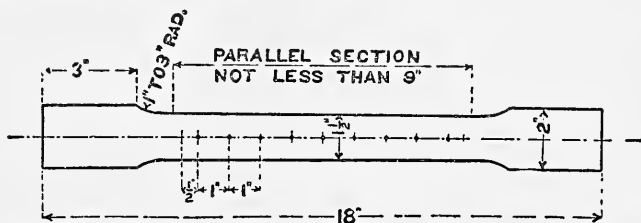
(d) Flange or boiler steel, fire-box steel and rivet steel, both before and after quenching, shall bend cold one hundred and eighty (180) degrees flat on itself without fracture on the outside of the bent portion.

Homogeneity Tests.

8. For fire-box steel a sample taken from a broken tensile test specimen shall not show any single seam or cavity more than one-fourth ($\frac{1}{4}$) inch long in either of the three fractures obtained on the test for homogeneity, as described in paragraph 13 of this section.

*Test Pieces and Methods of Testing.**Test Specimen for Tensile Test.*

9. The standard test specimen of eight (8) inch gaged length shall be used to determine the physical properties specified in paragraphs 5 and 6 of this section. The standard shape of the test specimen for sheared plates shall be as shown in Fig. 6.



Standard Test Specimen of 8" Gaged Length, Piece to be of Same Thickness as Plate.

FIG. 6.

For other material the test specimen may be the same as for sheared plates, or it may be planed or turned parallel throughout its entire length; and in all cases, where possible, two opposite sides of the test specimens shall be the rolled surfaces. Rivet rounds and small rolled bars shall be tested of full size as rolled.

Number of Tensile Tests.

10. One tensile test specimen will be furnished from each plate as it is rolled, and two tensile test specimens will be furnished from each melt of rivet rounds. In case any of these develops flaws or breaks outside of the middle third of its gaged length, it may be discarded and another test specimen substituted therefor.

Test Specimens for Bending.

11. For material three-fourths ($\frac{3}{4}$) inch or less in thickness the bending test specimen shall have the natural rolled surface on two opposite sides. The bending test specimens cut from plates shall be one and one-half ($1\frac{1}{2}$) inches wide, and for material more than three-fourths ($\frac{3}{4}$) inch thick the bending test specimen may be one-half ($\frac{1}{2}$) inch thick. The sheared edges of bending test specimens may be milled or planed. The bending test specimens for rivet rounds shall be of full size as rolled. The bending tests may be made by pressure or by blows.

Number of Bending Tests.

12. One cold bending specimen and one quenched bending specimen will be furnished from each plate as it is rolled. Two cold bending

specimens and two quenched bending specimens will be furnished from each melt of rivet rounds. The homogeneity test for fire-box steel shall be made on one of the broken tensile test specimens.

Homogeneity Tests for Fire-box Steel.

13. The homogeneity test for fire-box steel is made as follows: A portion of the broken tensile test specimen is either nicked with a chisel or grooved on a machine, transversely about one-sixteenth ($\frac{1}{16}$) inch deep, in three places about two (2) inches apart. The first groove should be made on one side two (2) inches from the square end of the specimen; the second, two (2) inches from it on the opposite side; the third, two (2) inches from the last, and on the opposite side from it. The test specimen is then put in a vise, with the first groove about one-fourth ($\frac{1}{4}$) inch above the jaws, care being taken to hold it firmly. The projecting end of the test specimen is then broken off by means of a hammer, a number of light blows being used, and the bending being away from the groove. The specimen is broken at the other two grooves in the same way. The object of this treatment is to open and render visible to the eye any seams due to failure to weld up, or to foreign interposed matter or cavities due to gas bubbles in the ingot. After rupture, one side of each fracture is examined, a pocket lens being used, if necessary, and the length of the seams and cavities is determined.

Yield Point.

14. For the purposes of this specification the yield point shall be determined by the careful observation of the drop of the beam or halt in the gage of the testing machine.

Sample for Chemical Analysis.

15. In order to determine if the material conforms to the chemical limitations prescribed in paragraph 3 of this section, analysis shall be made of drillings taken from a small test ingot. An additional check analysis may be made from a tensile specimen of each melt used on an order, other than in locomotive fire-box steel. In the case of locomotive fire-box steel a check analysis may be made from the tensile specimen from each plate as rolled.

Variation in Weight.

Variation in Weight.

16. The variation in cross section of weight of more than $2\frac{1}{2}$ per cent. from that specified will be sufficient cause for rejection, except in the case of sheared plates, which will be covered by the following permissible variations:—

(e) Plates $12\frac{1}{2}$ pounds per square foot or heavier, up to 100 inches wide, when ordered to weight, shall not average more than $2\frac{1}{2}$ per

cent. variation above or $2\frac{1}{2}$ per cent. below the theoretical weight; when 100 inches wide and over, 5 per cent. above or 5 per cent. below the theoretical weight.

(f) Plates under $12\frac{1}{2}$ pounds per square foot, when ordered to weight, shall not average a greater variation than the following: up to 75 inches wide, $2\frac{1}{2}$ per cent. below the theoretical weight; 75 inches wide up to 100 inches wide, 5 per cent. below the theoretical weight; when 100 inches wide and over, 10 per cent. above or 3 per cent. below the theoretical weight.

(g) For all plates ordered to gage there will be permitted an average excess of weight over that corresponding to the dimensions on the order equal in amount to that specified in the following table: —

Table of Allowances for Overweight for Rectangular Plates when ordered to Gage. Plates $\frac{1}{4}$ Inch and Over in Thickness.

[Plates will be considered up to gage if measuring not over 1-100 inch less than the ordered gage. The weight of 1 cubic inch of rolled steel is assumed to be .2833 pounds.]

Thickness of Plate (Inch).	WIDTH OF PLATE.		
	Up to 75 Inches (Per Cent.).	75 to 100 Inches (Per Cent.).	Over 100 Inches (Per Cent.).
$\frac{1}{4}$	10	14	18
$\frac{5}{16}$	8	12	16
$\frac{3}{8}$	7	10	13
$\frac{7}{16}$	6	8	10
$\frac{1}{2}$	5	7	9
$\frac{9}{16}$	$4\frac{1}{2}$	$6\frac{1}{2}$	$8\frac{1}{2}$
$\frac{5}{8}$	4	6	8
Over $\frac{5}{8}$	$3\frac{1}{2}$	5	$6\frac{1}{2}$

Finish.

Finish.

17. All finished material shall be free from injurious surface defects and laminations, and must have a workmanlike finish.

Plate Manufacturer to Stamp Plates and Heads.

Plates to be stamped.

18. Each plate shall be distinctly stamped by the plate manufacturer with the heat number.

19. Each plate shall be distinctly stamped by the plate manufacturer in at least five places in the following manner: At the four corners, at a distance of about twelve (12) inches from the edges, and at or near the center of the plate, with the name of the manufacturer, place where manufactured, brand and lowest tensile strength.

Heads to be stamped.

20. Each head shall be distinctly stamped by the plate manufacturer on each side with the name of the manufacturer, place where manufactured, brand and lowest tensile strength; stamps to be so located as to be plainly visible when the head is finished.

SECTION 2.

*Material to be used.**Shell Plates and Heads.*

1. Shells, drums, butt straps, heads, and any plates that require staying or flanging, shall be of Open-hearth Flange, Fire-box or Extra Soft Steel, as specified in paragraphs 3 and 5, section 1, Part III. of these regulations.

Rivets.

2. Rivets shall be of Open-hearth Extra Soft Steel, as specified in paragraphs 3 and 5, section 1, Part III. of these regulations.

3. *Specifications for Cast Steel.**Chemical Properties.*

Phosphorus, not over 0.05 per cent.

Sulphur, not over 0.05 per cent.

Physical Properties.

Tensile strength, pounds per square inch, 50,000 to 60,000.

Elongation in two inches (2"), 23 per cent.

Reduction of area, 30 per cent.

All steel castings must receive such heat treatment as will produce fine grain, homogeneous and tough metal, free from slag, cracks and cavities, injurious blowholes or other defects.

Cast steel, cast-iron or malleable iron tank fittings shall not be used unless made by regular processes and by manufacturers who stamp such fittings with their trade mark or identifying stamp, and who guarantee the castings to possess the chemical and physical properties stated in these regulations.

Cast Steel.

4. Cast steel for use in tank manhole frames, air-pipe fittings, side lugs, or any other parts of tank where cast steel is used, shall not have less than fifty thousand (50,000) pounds tensile strength.

Cast Iron, Cast Steel and Malleable Iron.

5. Cast iron for use in tank construction shall not have less than eighteen thousand (18,000) pounds tensile strength.

6. Where cast-iron construction is allowed, the maximum working strain at any section shall not exceed fifteen hundred (1,500) pounds per square inch. Where cast steel construction is allowed, the maximum working strain at any section shall not exceed seventy-five hundred (7,500) pounds per square inch. For special construction where Open-hearth Fire-box, Flange or Extra Soft Steel cannot practicably be used, cast steel construction will be allowed. Cast iron or malleable iron will not be allowed on shells, heads or plates of air tanks which are subject to the pressure of the air-compressor system, unless otherwise stated in these regulations.

SECTION 3.

Stamps to be Visible.

1. In laying out shell plates and heads in the shop, care shall be taken to leave at least one of the stamps, specified in paragraphs 19 and 20, section 1, Part III. of these regulations, so located as to be plainly visible when the tank is completed.

2. A manufacturer who desires to construct MASSACHUSETTS STANDARD tanks, shall send a written application to the Board of Boiler Rules, and receive written authority from said Board, before taking any steps toward the construction of a MASS STD tank. A detailed list of Shop Equipment must accompany the manufacturer's application for such authority; also advice of the name of the State Inspector or of the authorized inspector holding a certificate of competency as an inspector of steam boilers for this Commonwealth and in the employ of an insurance company authorized to inspect and insure steam boilers for this Commonwealth, who will examine during construction, and stamp MASS STD TANK upon completion, a tank constructed in strict accordance with these regulations. Upon receipt of said application, the Board will designate the style of stamping which it will approve, after the following model: —

MASS STD TANK 1 (Designation by Board)
--

The manufacturer shall then submit a five inch by three inch (5"×3") brass or copper plate, showing exactly the style of stamping designated by the Board, for approval; the height of letters and figures to be not less than one-fourth inch ($\frac{1}{4}$ ").

Tank to be stamped.

3. Each tank shall conform in every detail with the regulations prescribed by this Board, and shall be distinctly stamped with the words MASSACHUSETTS STANDARD TANK, abbreviated to read MASS STD TANK, by a member of the boiler inspection department of the district police, or an inspector as provided by sections 1 and 5, chapter 649, Acts of 1914, and who is not, directly or indirectly, interested in the manufacture or sale of air tanks, but in the employ of an insurance company authorized to insure tanks in this Commonwealth. Each tank shall be stamped by the builder, in the presence of the inspector, with a serial number and with the style of stamping shown in facsimile previously approved by this Board.

Stock Tanks.

4. Any inspector, holding a certificate of competency as an inspector of steam boilers for this Commonwealth, may make final inspection and test on a tank built under the Regulations of the Board of Boiler Rules of the Commonwealth of Massachusetts, provided the manufacturer of said tank, or his representative, makes affidavit under oath that said tank has been so constructed, and furnishes the record of a properly authorized inspector who has followed the construction of the tank.

Serial Numbers.

5. In numbering serially, each builder shall commence with the number one (1), and continue numbering in consecutive order.

Data Reports.

6. A data report, on forms to be furnished by the boiler inspection department of the district police, shall be forwarded by the builder to the deputy chief of such department, for each tank stamped MASS STD TANK, before the tank is shipped from the shop.

Location of Air-tank Manufacturer's Stamps.

7. Location of air-tank manufacturer's stamps to be as follows: plain cylindrical tanks, and all other tanks not of a steam boiler type shall have at least one stamp, all stamps to be plainly visible when the tank is completed. On a tank with a manhole, said stamps shall be close to the manhole opening; on a tank without a manhole, close to the handhole; and on a tank without either a manhole or handhole, in a conspicuous place.

Stamps not to be covered.

8. The tank builder's stamp shall not be covered by insulating or other material.

Construction Inspection.

9. All shops in which tanks are constructed for installation in this Commonwealth shall be open to the members of the boiler inspection department of the district police and inspectors as provided by sections 1 and 5, chapter 649, Acts of 1914, at all reasonable hours, for inspection of material, methods of manufacture, workmanship and testing.

SECTION 4.

To determine Maximum Allowable Pressure.

1. The maximum pressure to be allowed on a steel or wrought-iron shell or drum of a tank shall be determined from the minimum thickness of the shell plates, the lowest tensile strength stamped on the plates by the plate manufacturer, the efficiency of the longitudinal joint, the inside diameter of the outside course, and a factor of safety of not less than five (5), the formula being:—

$$\frac{T. S. \times t \times \%}{R \times F. S.} = \text{maximum allowable working pressure per square inch, in pounds.}$$

T. S. = tensile strength of shell plates, in pounds.

t = minimum thickness of shell plates, in inches.

% = efficiency of longitudinal joint or ligament between tube holes, whichever is the least.

R = radius = one-half ($\frac{1}{2}$) the inside diameter of the outside course of the shell or drum.

F. S. = 5, the lowest factor of safety allowed on tanks installed after June 9, 1914.

When it is desired to construct a tank of special material, the case shall be submitted to this Board for approval.

NOTE. — The method of determining the efficiency of longitudinal joint is given in section 4, Part II.

Longitudinal Joints.

2. The longitudinal joints of a tank, the shell or drum of which exceeds thirty-six (36) inches in diameter, shall be of butt and double strap construction.

3. The longitudinal joints of a tank, the shell or drum of which does not exceed thirty-six (36) inches in diameter, may be of lap-riveted construction; and the maximum pressure allowed on such shells or drums shall not exceed one hundred (100) pounds per square inch.

4. Any form of longitudinal joint, other than specified in paragraphs 2 and 3 of this section, shall be submitted to this Board for approval.

5. No air tank shall have a continuous longitudinal joint over twelve (12) feet in length.

Welded Joints.

6. The efficiency of longitudinal joint of a shell or drum, when welded by the forging process, shall not exceed the following:—

55.0% when the shell plates are stamped 52,000 T. S.

54.0% when the shell plates are stamped 53,000 T. S.

53.0% when the shell plates are stamped 54,000 T. S.

52.0% when the shell plates are stamped 55,000 T. S.

51.1% when the shell plates are stamped 56,000 T. S.

NOTE.—56,000 pounds will be the highest tensile strength used in calculating the maximum allowable working pressure on a shell or drum, the longitudinal joints of which are welded by the forging process, this being irrespective of a higher tensile strength than 56,000, which may be stamped on the plates. The formula for calculating the working pressure is given in paragraph 1, section 4, Part III. of these Regulations.

Thickness of Shell Plates.

7. The minimum thickness of plates used in the construction of a tank shall be one-fourth ($\frac{1}{4}$) inch.

8. The minimum thickness of shell plates shall be as follows:—

WHEN THE DIAMETER OF SHELL IS —			
36" or Under.	Over 36" to 54" Inclusive.	Over 54" to 72" Inclusive.	Over 72".
$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "

Thickness of Butt Straps.

9. The minimum thickness of butt straps shall be as follows:—

Thickness of Shell Plates.	Minimum Thickness of Butt Straps.	Thickness of Shell Plates.	Minimum Thickness of Butt Straps.
$\frac{1}{4}$ "	$\frac{1}{4}$ "	$1\frac{1}{32}$ "	$\frac{7}{16}$ "
$\frac{9}{32}$ "	$\frac{1}{4}$ "	$\frac{9}{16}$ "	$\frac{7}{16}$ "
$\frac{5}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
$1\frac{1}{32}$ "	$\frac{1}{4}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "
$\frac{3}{8}$ "	$\frac{5}{16}$ "	$\frac{7}{8}$ "	$\frac{5}{8}$ "
$1\frac{1}{32}$ "	$\frac{5}{16}$ "	1"	$\frac{3}{4}$ "
$\frac{7}{16}$ "	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	$\frac{3}{4}$ "
$1\frac{5}{32}$ "	$\frac{3}{8}$ "	$1\frac{1}{4}$ "	$\frac{7}{8}$ "
$\frac{1}{2}$ "	$\frac{7}{16}$ "		

Butt Straps.

10. Butt straps shall be rolled or formed to the proper curvature on forms made for that purpose.

Thickness of tube sheets.

11. The minimum thickness of tube sheets shall be as follows: —

WHEN THE DIAMETER OF TUBE SHEET IS —			
42" or Under.	Over 42" to 54" Inclusive.	Over 54" to 72" Inclusive.	Over 72."
$\frac{3}{8}"$	$\frac{7}{16}"$	$\frac{1}{2}"$	$\frac{9}{16}"$

*Bumped Heads.**Convex Head, curved outward from the Shell.*

12. The minimum thickness of a convex head for riveted or forge welded shells shall be: —

$$t = \frac{8\frac{1}{3} R P}{S}$$

except that the least thickness shall be three-eighths inch ($\frac{3}{8}"$) on tanks twenty inches (20") in diameter or larger, and five-sixteenths inch ($\frac{5}{16}"$) on tanks of less than twenty inches (20") diameter.

The minimum thickness of a convex head for seamless cylinders shall be: —

$$t = \frac{5 P R}{S}$$

except that the least thickness shall be one-quarter inch ($\frac{1}{4}"$).

Concave Head, curved inward to the Shell.

The minimum thickness of a concave head shall be: —

$$t_1 = 1.67 t$$

where t = thickness, in inches, of a convex head.

P = working pressure, in pounds per square inch, for which the tank is designed.

R = radius, in inches = $\frac{1}{2}$ the inside diameter of the outside course of the shell.

S = tensile strength of the shell plates, in pounds per square inch.

t_1 = thickness of a concave head, in inches.

Convex and concave heads shall be dished to a radius equal to or less than the diameter of the shell, and shall be true portions of spheres.

The flanging of convex and concave heads shall be carefully performed, and at the proper temperature; and if more than one heat

is required, the head shall be annealed. The least radius of the flange curve shall be three (3) times the thickness of the head, and shall be measured on the concave side of head.

13. When a convex or concave head has a manhole opening, the thickness as found by the formula in paragraph 12 of this section shall be increased by not less than one-eighth ($\frac{1}{8}$) inch.

14. When a convex or concave head has a manhole opening, the flange shall be turned inward, and to a depth of not less than three (3) times the thickness of the head.

Stayed Flat Surfaces.

15. The minimum thickness of plates in stayed flat surface construction shall be five-sixteenths ($\frac{5}{16}$) inch.

Riveting.

16. On any joint, the distance from the center of rivet hole to the edge of the plate, except rivet holes in the ends of butt straps, shall not be less than one and one-half ($1\frac{1}{2}$) times the diameter of the rivet hole.

Circumferential Joints.

17. These joints shall be carefully calculated, and be at least fifty per cent. (50%) of the value of the solid plate.

18. Rivet holes, except for attaching stays or angle bars to heads, shall be drilled full size with plates, butt straps and heads bolted up in position; or they may be punched not to exceed one-fourth ($\frac{1}{4}$) inch less than full size for plates over five-sixteenths ($\frac{5}{16}$) inch in thickness, and one-eighth ($\frac{1}{8}$) inch less than full size for plates not exceeding five-sixteenths ($\frac{5}{16}$) inch in thickness, and then drilled or reamed to full size with plates, butt straps and heads bolted up in position.

19. Rivets shall be of sufficient length to completely fill the rivet holes and form a head equal in strength to the body of the rivet.

20. Rivets shall be machine driven, wherever possible, with sufficient pressure to fill the rivet holes, and shall be allowed to cool and shrink under pressure.

Calking and Planing.

21. The edges of plates and butt straps shall be planed to a depth of not less than one-eighth ($\frac{1}{8}$) inch. Calking shall be done with a roundnosed tool.

Openings in Shells, Drums or Heads to be re-enforced.

22. An opening in a tank for a threaded pipe connection one (1) inch in diameter or over shall not have less than the minimum number of threads in such opening, as shown in the following table: —

Size of pipe connection, in inches,	1 and $1\frac{1}{4}$	$1\frac{1}{2}$ and 2	$2\frac{1}{2}$ to 4 inclusive	$4\frac{1}{2}$ to 6 inclusive	7 and 8	9 and 10	12
Number of threads per inch,	$11\frac{1}{2}$	$11\frac{1}{2}$	8	8	8	8	8
Minimum number of threads required in opening,	4	5	7	8	10	12	13
Minimum thickness of material required to give above number of threads.	$.348''$ ($.375'' = \frac{3}{8}''$)	$.435''$ ($.4375'' = \frac{7}{16}''$)	$.875''$	1"	1.25"	1.5"	1.625"

Flanges.

If the thickness of the material in the tank is not sufficient to give such number of threads, there shall be a standard commercial pressed steel flange, cast steel flange or steel plate, substantially riveted to the tank so as to give the required number of threads.

Manholes.

23. All air tanks over twenty-four inches (24") in diameter, excepting those of a steam boiler type, shall have an eleven by fifteen inch (11"×15") manhole.

Manhole Frames.

24. A manhole frame shall be of wrought or cast steel, and have a net cross-sectional area, on a line parallel to the axis of the shell, not

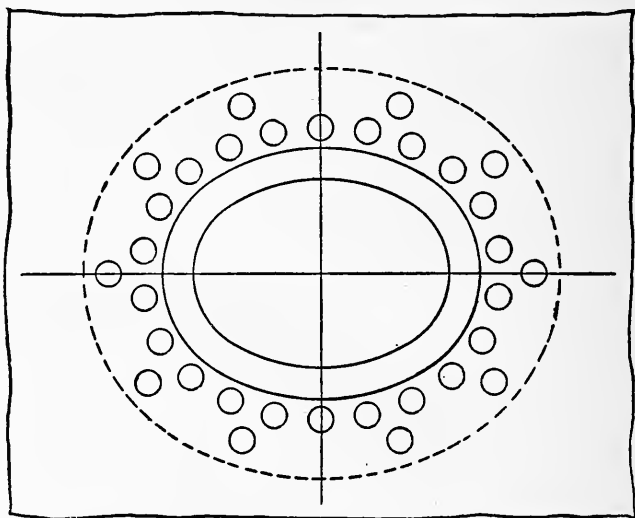


FIG. 7.

less than the cross-sectional area of shell plate removed on the same line.

25. Manhole frames on shells or drums shall have the proper curvature, and on tanks over forty-eight (48) inches in diameter shall be riveted to the shell or drum with two rows of rivets, which may be pitched as shown in Fig. 7. The strength of the rivets in shear shall not be less than the tensile strength of the shell plate removed, on a line parallel to the axis of the shell, through the center of the manhole.

26. The strength of manhole plates, yokes and bolts shall be in proportion to the strength of the manhole frames.

27. Manhole plates shall be of wrought or cast steel.

Support.

28. All air tanks which are to be placed in a vertical position shall be supported by three or more lugs, or by a supporting ring under the bottom of said tank and of a construction to allow necessary inspection of the same.

29. There shall be not less than one (1) inch of solid plate in the clear, inside and out, around a handhole opening in a tank.

Supporting Lugs or Brackets.

30. Supporting lugs or brackets shall have the proper curvature, and be securely riveted or bolted to the shell; the shearing stress on the rivets or bolts not to exceed eight (8) per cent. of the allowable shearing strength given in paragraph 6, section 1, Part II. of these regulations. Cast iron shall not be used.

SECTION 5.

Pipe Threads.

1. The minimum number of threads that a pipe, nipple or tube shall screw into a fitting or plate, is given in the following table:—

Size of pipe connection, in inches,	.	.	.	1 and $1\frac{1}{4}$	$1\frac{1}{2}$ and 2	$2\frac{1}{2}$ to 4 inclusive	$4\frac{1}{2}$ to 6 inclusive	7 and 8	9 and 10	12
Number of threads per inch,	.	.	.	$11\frac{1}{2}$	$11\frac{1}{2}$	8	8	8	8	8
Minimum number of threads into fitting,	.	.	.	4	5	7	8	10	12	13

SECTION 6.

Tank in State on or before June 9, 1914, can be reinstalled.

1. A tank in this Commonwealth on or before June 9, 1914, which does not conform to the regulations prescribed by the Board of Boiler Rules, may be installed after a thorough internal and external inspection and hydrostatic pressure test by a member of the boiler inspection department of the district police, or by an inspector as provided by sections 1 and 5 of chapter 649 of the Acts of the year 1914, and employed by the company insuring the tank. The pressure allowed on such tank is to be ascertained by regulations prescribed by the Board of Boiler Rules.

Factors of Safety.

2. The lowest factors of safety to be used in calculating the maximum allowable pressures on tanks which were in this Commonwealth on or before June 9, 1914, and which are not MASSACHUSETTS STANDARD TANKS, if hereafter installed, shall be as follows:—

(a) Six (6) for tanks, the longitudinal joints of which are of lap-riveted construction, and the shells or drums of which have not been exposed to the products of combustion.

(b) Six (6) for tanks, the longitudinal joints of which are of lap-riveted construction, and the shells or drums of which have been exposed to the products of combustion, diameters up to and including thirty-six (36) inches.

(c) Eight (8) for tanks, the longitudinal joints of which are of lap-riveted construction, and the shells or drums of which have been exposed to the products of combustion, diameters over thirty-six (36) inches.

(d) Five (5) for tanks, the longitudinal joints of which are of butt and double strap construction, age not exceeding ten (10) years.

(e) Five and five-tenths (5.5) for tanks, the longitudinal joints of which are of butt and double strap construction, age over ten (10) years.

GEORGE A. LUCK.
FREDERICK A. WALLACE.
HENRY H. LYNCH.
ROBERT J. DUNKLE.
THOMAS R. ARMSTRONG.

AUG. 12, 1914.

In addition to the legislation affecting this department before referred to, an act was passed relative to safety valves as applied to ammonia compressors, the same being contained

in chapter 467, Acts of 1914.¹ By the provisions of section 2 of that statute the Board of Boiler Rules is authorized to formulate rules for the size, design, location and piping of safety valves on ammonia compressors. This subject was promptly taken up by the Board of Boiler Rules; but, as it has been found necessary to inaugurate exhaustive tests, owing to the lack of reliable data upon which to base the required rules, the rules have not yet been completed.

The insurance companies authorized to inspect and insure steam boilers in this Commonwealth are as follows:—

Employers Liability Assurance Corporation.
 Fidelity and Casualty Company.
 Hartford Steam Boiler Inspection and Insurance Company.
 Maryland Casualty Company.
 Mutual Boiler Insurance Company.
 Royal Indemnity Company.
 Travelers Indemnity Company.
 United States Casualty Company.
 United States Fidelity and Guaranty Company.

A total of 17,969 reports of boiler inspections by insurance companies has been received, being 963 more than was rendered by such companies during the previous year. The number of air-tank inspection reports submitted by the insurance companies was 41, making a total of 18,010 reports received from the insurance companies. This represents a total increase of 1,004 inspection reports from insurance companies, as compared with the previous year.

These insurance companies employ inspectors of steam boilers holding certificates of competency issued by this department. Twenty-seven applicants for certificates of competency as inspectors of steam boilers for this Commonwealth, in the employ of authorized insurance companies, were examined during the year, fourteen of whom were granted certificates, and the remaining thirteen were rejected. There are now one hundred and twelve insurance company inspectors holding certificates of competency.

The amount of \$1,000 appropriated for investigation

¹ This statute will be found on page 178 of this report.

work and apparatus, and for maintenance in the boiler inspection department, has been expended, with the exception of a small amount, in still further standardizing the equipment for examination of applicants for licenses as engineers and firemen at the main and branch offices of the department, the following additional apparatus having been installed: —

In the main office, Room 3, State House, two boiler test pumps.

In the branch office at Lowell, one 24 inch by 5 foot vertical tubular boiler; one boiler test pump.

In the branch office at Fall River, one National feed water heater; one boiler test pump.

In the branch office at Salem, one boiler test pump.

In the branch office at Springfield, one boiler test pump.

The members of the department have made the following number of inspections of steam boilers: internal inspections, 2,959; external inspections, 3,764; total, 6,723. In addition, 23 inspections of air tanks have been made, making a combined total of 6,746 inspections during the year.

The number of applicants examined for licenses as engineers or firemen has been 6,490, of which number 2,955 were granted licenses and 3,535 were rejected. The number of applicants examined for licenses as operators of hoisting machinery has been 147, of which number 125 were granted licenses and 22 were rejected. The grand total of applicants for licenses has been 6,637, of which number 3,080 were successful and 3,557 were unsuccessful. The additional work performed by members of the department, serving on boards of appeal from decisions of individual examiners, or on boards of examiners of applicants for certificates of competency as inspectors of steam boilers for insurance companies in this Commonwealth, is shown by the following tabulation: —

NUMBER OF TIMES EACH INSPECTOR SERVED ON BOARDS OF APPEAL
FROM DECISIONS OF INDIVIDUAL EXAMINERS, OR ON BOARDS OF
EXAMINERS OF APPLICANTS FOR CERTIFICATES OF COMPETENCY
AS INSPECTORS OF STEAM BOILERS FOR THIS COMMONWEALTH.

INSPECTOR.	SERVICE ON —	
	Boards of Appeal.	Boards for Certificates.
Baxter, Sturgis C.,	14	6
Bragdon, Percy B.,	—	2
Bushek, Henry,	7	4
DeShazo, James B.,	—	—
Evans, James W.,	29	3
Ferguson, Charles,	13	6
Forbush, Franklin L.,	—	—
Harlow, Willis A.,	94	20
Hinckley, Frank C.,	—	—
Kearney, John B.,	—	3
Lovering, Arthur F.,	—	—
Mackintosh, George D.,	—	3
Mitchell, Herbert E.,	—	3
Moran, Edward,	16	7
Mores, Edward A.,	—	—
Morton, Harry E.,	42	6
Ramsay, William W.,	—	—
Richardson, George E.,	—	—
Sanborn, Freeman H.,	—	—
Simm, Wilbert E.,	74	18
Skoglund, Charles,	7	1
Sullivan, Herbert A.,	—	—
Waterman, Benjamin S.,	—	—
Wright, Franklin G.,	109	19

All board meetings, as tabulated above, were held in the main office at Boston.

On May 29, 1914, a 35 inch by 7 foot vertical fire-tube boiler owned by H. E. Cushing, and used on his farm at Seekonk, Mass., for agricultural purposes exclusively, thus being exempt from inspection under the boiler inspection law, exploded, resulting in the death of Frank I. Fish the

next day from scalds and other injuries. The report of the investigation by an inspector of this department is, in part, as follows: —

The real conditions under which this boiler was being operated will never be known, as the operator is dead. In my opinion the explosion was due solely to the extremely weak condition of the furnace sheet, and I believe that the owner was ignorant of the real condition of this boiler. So far as I was able to learn, this boiler had never been inspected by an authorized boiler inspector of this Commonwealth, it being exempt from inspection on account of being used for agricultural purposes exclusively. I have no hesitancy in stating that if this boiler had been inspected the defect which caused the explosion would have been discovered.

On May 22, 1914, an air tank 18 inches in diameter and 38 inches in length exploded at the store of Strong's Tire Supply Company, 386 Bridge Street, Springfield, but fortunately no one was injured thereby. This tank was exempt from the provisions of the air-tank inspection law, not being used to operate pneumatic machinery but to inflate automobile tires.

The sum of \$27,457.20 has been paid to the Treasurer of the Commonwealth, covering the following amounts received by me from the various inspectors of this department: —

For the internal inspection of steam boilers, . . .	\$14,055 00
For the external inspection of steam boilers, . . .	6,658 20
For the inspection of air tanks,	63 00
From applicants for licenses as steam engineers or firemen,	6,534 00
From applicants for licenses as operators of hoisting machinery, the motive power for which is mechanical and other than steam,	147 00
Total.	<hr/> \$27,457 20

The following comparative statement of inspections made by members of this department during the past five years indicates the growth in efficiency: —

YEAR.	INSPECTION OF BOILERS.		Inspection of Air Tanks.	Total Inspections.
	Internal.	External.		
1910,	2,865	972	—	3,837
1911,	2,990	1,520	—	4,510
1912,	2,689	1,645	—	4,334
1913,	2,728	2,675	—	5,403
1914,	2,959	3,764	23	6,746

The total number of MASSACHUSETTS STANDARD boilers which have been constructed under the Rules formulated by the Board of Boiler Rules of this Commonwealth, data reports for which have been received and carefully checked by the boiler inspection department, has been as follows:—

YEAR ENDING OCTOBER 31.	Total for Year.	YEAR ENDING OCTOBER 31.	Total for Year.
1908 (from May 1),	519	1912,	2,002
1909,	1,365	1913,	2,860
1910,	1,642	1914,	2,738
1911,	1,604	Total to date,	12,730

Four hundred and thirty-eight applications for permission to install boilers in this Commonwealth which do not conform to the Rules formulated by the Board of Boiler Rules have been received since May 1, 1908; of this number 427 have been granted, the remaining 11 applications having been rejected. The number of such permissions granted during the year covered by this report is 32.

The following tabulation shows the prosecutions for violation of the various laws enforced by this department and the results:—

CAUSE OF PROSECUTION.	Number of Prosecutions.	Fined.	Filed.	Discharged.	Appeals.	Total Amount of Fines and Costs imposed.
Causing boiler to be operated by a person not duly licensed.	3	1	2	-	-	\$25 00
Causing boiler and engine to be operated by a person not duly licensed.	3	2	1	-	2	85 00
Failure to keep daily record of boiler,	2	1	1	-	1	20 00
Non-payment of boiler inspection fee,	7	2	5	-	-	26 50
Operating boiler, and causing boiler to be operated without certificate of inspection.	4	3	1	-	1	155 00
Operating boiler without being duly licensed, .	6	4	-	2	-	55 00
Operating boiler without having certificate posted,	1	1	-	-	-	20 00
Operating boiler and engine without being duly licensed.	4	1	3	-	-	10 00
Operating engine without being duly licensed, .	1	-	1	-	-	-
Totals,	31	15	14	2	4	\$396 50

ASSIGNMENTS OF DISTRICTS.

The following assignments of districts are now in force: —

BOILER INSPECTORS.

District No. 1.

HENRY BUSHEK, *Boiler Inspector.*

Office, 12 Kinsman Block, Salem.

Amesbury	Hamilton	NEWBURYPORT
BEVERLY	HAVERHILL	North Andover
Boxford	Ipswich	Rockport
Danvers	Manchester	Rowley
Essex	Marblehead	Salisbury
Georgetown	Merrimac	Topsfield
GLOUCESTER	Middleton	Wenham
Groveland	Newbury	West Newbury

District No. 2.

WILLIAM W. RAMSAY, *Boiler Inspector.*

Office, 12 Kinsman Block, Salem.

LYNN	Peabody	Saugus
Lynnfield	Revere	Swampscott
Nahant	SALEM	Winthrop

District No. 3.

EDWARD A. MORES, *Boiler Inspector.*

Office, 71 Central Block, Lowell.

Andover	LAWRENCE	North Reading
Billerica	LOWELL	Tewksbury
Dracut	Methuen	Wilmington

District No. 4.CHARLES SKOGLUND, *Boiler Inspector.*

Office, 3 State House, Boston.

Acton	Concord	WALTHAM
Arlington	Hudson	Watertown
Bedford	Lexington	Wayland
Belmont	Lincoln	Weston
Boxborough	Maynard	Winchester
Burlington	Stow	WOBURN
CAMBRIDGE	Sudbury	

District No. 5.CHARLES FERGUSON, *Boiler Inspector.*

Office, 3 State House, Boston.

EVERETT	MELROSE	Stoneham
MALDEN	Reading	Wakefield
MEDFORD	SOMERVILLE	

District No. 6.JOHN B. KEARNEY, *Boiler Inspector.*

Office, 3 State House, Boston.

BOSTON proper, bounded by Causeway Street, Commercial Street, Atlantic Avenue, Essex Street, Boylston Street, Massachusetts Avenue to Charles River, and Charles River to Warren bridge.

District No. 7.GEORGE D. MACKINTOSH, *Boiler Inspector.*

Office, 3 State House, Boston.

BOSTON proper and South Boston, bounded by Summer Street Extension, Atlantic Avenue, Essex Street, Boylston Street, Massachusetts Avenue, Columbia Road to the water front.

District No. 8.JAMES W. EVANS, *Boiler Inspector.*

Office, 3 State House, Boston.

CHARLESTOWN, Chelsea, East Boston and the water front, from Mystic bridge in Charlestown to Summer Street Extension, including Charles River to Cottage Farm bridge; also Boston harbor and the islands therein.

District No. 9.EDWARD MORAN, *Boiler Inspector.*

Office, 3 State House, Boston.

BOSTON, south of Massachusetts Avenue and Columbia Road, including:—

Allston	Jamaica Plain	Roxbury
Brighton	Mattapan	West Roxbury
Dorchester	Roslindale	

District No. 10.STURGIS C. BAXTER, *Boiler Inspector.*

Office, 3 State House, Boston.

Ashland	Holbrook	Norfolk
Avon	Holliston	Norwood
Bellingham	Hopkinton	Plainville
Braintree	Hull	QUINCY
Brookline	Hyde Park	Randolph
Canton	MARLBOROUGH	Sharon
Cohasset	Medfield	Sherborn
Dedham	Medway	Stoughton
Dover	Millis	Walpole
Foxborough	Milton	Wellesley
Framingham	Natick	Westwood
Franklin	Needham	Weymouth
Hingham	NEWTON	Wrentham

District No. 11.HERBERT A. SULLIVAN, *Boiler Inspector.*

Office, Hudner Building, Fall River.

Attleborough	Gay Head	Rehoboth
Berkley	Gosnold	Seekonk
Chilmark	Mansfield	Somerset
Dartmouth	Nantucket	Swansea
Dighton	North Attleborough	TAUNTON
Easton	Norton	Tisbury
Edgartown	Oak Bluffs	West Tisbury
FALL RIVER	Raynham	Westport
Freetown		

District No. 12.PERCY B. BRAGDON, *Boiler Inspector.*

Office, Hudner Building, Fall River.

Abington	Halifax	Pembroke
Acushnet	Hanover	Plymouth
Barnstable	Hanson	Plympton
Bourne	Harwich	Provincetown
Brewster	Kingston	Rochester
Bridgewater	Lakeville	Rockland
BROCKTON	Marion	Sandwich
Carver	Marshfield	Seituate
Chatham	Mashpee	Truro
Dennis	Mattapoissett	Wareham
Duxbury	Middleborough	Wellfleet
East Bridgewater	NEW BEDFORD	West Bridgewater
Eastham	Norwell	Whitman
Fairhaven	Orleans	Yarmouth
Falmouth		

District No. 13.JAMES B. DESHAZO, *Boiler Inspector.*

Office, 476 Main Street, Worcester.

Auburn	Leicester	Spencer
Blackstone	Mendon	Sturbridge
Brookfield	Milford	Sutton
Charlton	Millbury	Upton
Douglas	Northbridge	Uxbridge
Dudley	North Brookfield	Warren
Grafton	Oxford	Webster
Hopedale	Southbridge	West Brookfield

Also city of WORCESTER south of Shrewsbury. Front and Pleasant streets.

District No. 14.HERBERT E. MITCHELL, *Boiler Inspector.*

Office, 476 Main Street, Worcester.

Barre	Clinton	Hubbardston
Berlin	Dana	Lancaster
Bolton	Hardwick	Leominster
Boylston	Holden	New Braintree

Northborough	Phillipston	Southborough
Oakham	Princeton	Sterling
Paxton	Rutland	West Boylston
Petersham	Shrewsbury	Westborough

Also city of WORCESTER north of Shrewsbury, Front and Pleasant streets.

District No. 15.

FREEMAN H. SANBORN, *Boiler Inspector.*

Office, 21 Besse Place, Springfield.

Brimfield	Holland	SPRINGFIELD
East Longmeadow	Longmeadow	Wales
Hampden	Monson	Wilbraham

District No. 16.

ARTHUR F. LOVERING, *Boiler Inspector.*

Office, Masonic Building, Northampton.

Amherst	Granby	Shutesbury
Belchertown	Hadley	South Hadley
Chesterfield	Hatfield	Sunderland
Cummington	Leverett	Ware
Easthampton	NORTHAMPTON	Williamsburg
Goshen	Pelham	

District No. 17.

FRANKLIN L. FORBUSH, *Boiler Inspector.*

Office, Kimbell Block, North Adams.

Adams	Florida	Northfield
Ashfield	Gill	Orange
Bernardston	Greenfield	Plainfield
Buckland	Hawley	Rowe
Charlemont	Heath	Savoy
Clarksburg	Leyden	Shelburne
Colrain	Monroe	Warwick
Conway	Montague	Wendell
Deerfield	New Ashford	Whately
Erving	NORTH ADAMS	Williamstown

District No. 18.GEORGE E. RICHARDSON, *Boiler Inspector.*

Office, Court House, Pittsfield.

Alford	Lanesborough	Richmond
Becket	Lee	Sandisfield
Blandford	Lenox	Sheffield
Cheshire	Middlefield	Stockbridge
Chester	Monterey	Tolland
Dalton	Mount Washington	Tyringham
Egremont	New Marlborough	Washington
Great Barrington	Otis	West Stockbridge
Hancock	Peru	Windsor
Hinsdale	PITTSFIELD	Worthington

District No. 19.FRANK C. HINCKLEY, *Boiler Inspector.*

Office, 21 Besse Place, Springfield.

Agawam	Huntington	Russell
CHICOPEE	Ludlow	Southampton
Enfield	Montgomery	Southwick
Granville	New Salem	Westfield
Greenwich	Palmer	Westhampton
HOLYOKE	Prescott	West Springfield

District No. 20.BENJAMIN S. WATERMAN, *Boiler Inspector.*

Office, 71 Central Block, Lowell.

Ashburnham	Gardner	Shirley
Ashby	Groton	Templeton
Athol	Harvard	Townsend
Ayer	Littleton	Tyngsboro
Carlisle	Lunenburg	Westford
Chelmsford	Pepperell	Westminster
Dunstable	Royalston	Winchendon
Fitchburg		

Special Duty.WILLIS A. HARLOW, *Boiler Inspector.*HARRY E. MORTON, *Boiler Inspector.*WILBERT E. SIMM, *Boiler Inspector.*FRANKLIN G. WRIGHT, *Boiler Inspector.*

Office, Room 3, State House.

REPORTS OF BOILER INSPECTORS.

REPORT OF INSPECTOR HENRY BUSHEK, DISTRICT NO. 1.

Boiler Inspection Law.

Boilers inspected internally, 134; externally, 176,	310
Defects found on boilers or air tanks,	261
Boilers or air tanks ordered repaired,	14
Appendages ordered, or defective appendages ordered repaired or replaced,	222
Number of boilers or air tanks on which hydrostatic pressure test was applied,	99
Number of boilers or air tanks on which maximum allowable pressure was reduced,	12
Number of boilers or air tanks condemned,	2
Complaints investigated,	22
Prosecutions,	2
Fines imposed, . . . . .	.\$26.50

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	144
Licenses granted: —			
First-class engineers,	-	3	3
Second-class engineers,	-	2	2
Third-class engineers,	8	-	8
Fourth-class engineers,	4	-	4
Portable engineers,	1	-	1
First-class firemen,	7	-	7
Second-class firemen,	28	-	28
Specials to have charge of second-class plants,	-	5	5
Specials to have charge of third-class plants,	7	-	7
Specials to operate second-class plants,	1	-	1
Total licenses granted,	56	10	66
Applicants rejected,	78	10	88

Number of examinations by Board of which I was a member,	56
Licenses exchanged,	83
Licenses suspended,	2
Complaints investigated: engineers' and firemen's license law,	47

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	1
Licenses granted,	1

REPORT OF INSPECTOR WILLIAM W. RAMSAY, DISTRICT No. 2.

Boiler Inspection Law.

Boilers inspected internally, 123; externally, 169,	292
Defects found on boilers or air tanks,	256
Boilers or air tanks ordered repaired,	23
Appendages ordered, or defective appendages ordered repaired or replaced,	141
Number of boilers or air tanks on which hydrostatic pressure test was applied,	162
Number of boilers or air tanks on which maximum allowable pressure was reduced,	8
Number of boilers or air tanks condemned,	1
Complaints investigated,	2

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	279
Licenses granted: —			
First-class engineers,	—	6	6
Second-class engineers,	—	10	10
Third-class engineers,	22	—	22
Fourth-class engineers,	16	—	16
Portable engineers,	2	—	2
Steam-fire engineers,	4	—	4
First-class firemen,	35	—	35
Second-class firemen,	56	—	56
Specials to have charge of second-class plants,	—	8	8
Specials to have charge of third-class plants,	15	—	15
Specials to operate second-class plants,	1	—	1
Total licenses granted,	151	24	175
Applicants rejected,	95	9	104

Number of examinations by Board of which I was a member,	58
Licenses exchanged,	49
Complaints investigated: engineers' and firemen's license law,	26

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	5
Licenses granted,	5

REPORT OF INSPECTOR EDWARD A. MORES, DISTRICT NO. 3.

Boiler Inspection Law.

Boilers inspected internally, 286; externally, 108,	394
Defects found on boilers or air tanks,	75
Boilers or air tanks ordered repaired,	52
Appendages ordered, or defective appendages ordered repaired or replaced,	636
Number of boilers or air tanks on which hydrostatic pressure test was applied,	128
Number of boilers or air tanks on which maximum allowable pressure was reduced,	10
Number of boilers or air tanks condemned,	2
Complaints investigated,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	620
Licenses granted:—			
First-class engineers,	—	6	6
Second-class engineers,	—	14	14
Third-class engineers,	15	—	15
Fourth-class engineers,	3	—	3
Portable engineers,	6	—	6
Steam-fire engineers,	2	—	2
First-class firemen,	39	1	40
Second-class firemen,	188	—	188
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	10	—	10
Specials to operate second-class plants,	3	—	3
Total licenses granted,	266	25	291
Applicants rejected,	228	38	266

Number of examinations by Board of which I was a member,	102
Licenses exchanged,	78
Complaints investigated; engineers' and firemen's license law,	23

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	11
Licenses granted,	11
Complaints investigated,	3

REPORT OF INSPECTOR CHARLES SKOGLUND, DISTRICT No. 4.

Boiler Inspection Law.

Boilers inspected internally, 226; externally, 284,	510
Defects found on boilers or air tanks,	759
Boilers or air tanks ordered repaired,	70
Appendages ordered, or defective appendages ordered repaired or replaced,	970
Number of boilers or air tanks on which hydrostatic pressure test was applied,	286
Number of boilers or air tanks on which maximum allowable pressure was reduced,	27
Number of boilers condemned,	2
Prosecutions,	3
Fines imposed,	\$25

Air Tank Inspection Law.

Air tanks inspected,	2
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	397
Licenses granted:—			
First-class engineers,	—	8	8
Second-class engineers,	—	6	6
Third-class engineers,	32	1	33
Fourth-class engineers,	5	—	5
Portable engineers,	3	—	3
Steam-fire engineers,	2	—	2
First-class firemen,	27	—	27
Second-class firemen,	72	2	74
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	7	—	7
Specials to operate second-class plants,	1	1	2
Specials to operate third-class plants,	1	—	1
Total licenses granted,	150	22	172
Applicants rejected,	144	51	195

Number of examinations by Board of which I was a member,	116
Licenses exchanged,	42
Licenses suspended, 1; licenses revoked, 2,	3
Complaints investigated: engineers' and firemen's license law,	14

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	3
Licenses granted,	2
Complaints investigated,	1

REPORT OF INSPECTOR CHARLES FERGUSON, DISTRICT No. 5.

Boiler Inspection Law.

Boilers inspected internally, 99; externally, 121,	220
Defects found on boilers or air tanks,	53
Boilers or air tanks ordered repaired,	11
Appendages ordered, or defective appendages ordered repaired or replaced,	200
Number of boilers or air tanks on which hydrostatic pressure test was applied,	132

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	231
Licenses granted:—			
First-class engineers,	-	2	2
Second-class engineers,	-	1	1
Third-class engineers,	11	2	13
Fourth-class engineers,	8	-	8
Steam-fire engineers,	2	-	2
First-class firemen,	21	-	21
Second-class firemen,	48	-	48
Specials to have charge of second-class plants,	-	2	2
Specials to have charge of third-class plants,	4	-	4
Specials to operate second-class plants,	1	-	1
Total licenses granted,	95	7	102
Applicants rejected,	111	19	130

Number of examinations by Board of which I was a member,	93
Licenses exchanged,	19
Licenses suspended,	1
Complaints investigated: engineers' and firemen's license law,	11

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	5
Licenses granted,	5
Complaints investigated,	1

REPORT OF INSPECTOR JOHN B. KEARNEY, DISTRICT No. 6.

Boiler Inspection Law.

Boilers inspected internally, 73; externally, 202,	275
Defects found on boilers or air tanks,	21
Boilers or air tanks ordered repaired,	20
Appendages ordered, or defective appendages ordered repaired or replaced,	123
Number of boilers or air tanks on which hydrostatic pressure test was applied,	205
Number of boilers or air tanks on which maximum allowable pressure was reduced,	12
Complaints investigated,	41

Air Tank Inspection Law.

Air tanks inspected,	3
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	303
Licenses granted: —			
First-class engineers,	—	1	1
Second-class engineers,	—	2	2
Third-class engineers,	11	—	11
First-class firemen,	18	—	18
Second-class firemen,	37	—	37
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	8	—	8
Specials to operate second-class plants,	2	—	2
Total licenses granted,	76	7	83
Applicants rejected,	181	35	216

Number of examinations by Board of which I was a member,	106
Licenses exchanged,	105
Licenses revoked,	1

Complaints investigated: engineers' and firemen's license law,	72
Prosecutions,	1
Fines imposed,	\$20

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	6
Licenses granted,	5
Applicants rejected,	1
Complaints investigated,	1

REPORT OF INSPECTOR GEORGE D. MACKINTOSH, DISTRICT NO. 7.

Boiler Inspection Law.

Boilers inspected internally, 154; externally, 238,	392
Defects found on boilers or air tanks,	18
Boilers or air tanks ordered repaired,	9
Appendages ordered, or defective appendages ordered repaired or replaced,	527
Number of boilers or air tanks on which hydrostatic pressure test was applied,	264
Number of boilers or air tanks on which maximum allowable pressure was reduced,	6

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	318
Licenses granted: —			
First-class engineers,	—	3	3
Second-class engineers,	—	6	6
Third-class engineers,	15	—	15
Fourth-class engineers,	8	—	8
Portable engineers,	1	—	1
Steam-fire engineers,	2	—	2
First-class firemen,	21	—	21
Second-class firemen,	39	1	40
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	3	—	3
Specials to operate second-class plants,	4	—	4
Total licenses granted,	93	14	107
Applicants rejected,	192	30	222

Number of examinations by Board of which I was a member,	147
Licenses exchanged,	43
Licenses suspended, 1; licenses revoked, 3,	4
Complaints investigated: engineers' and firemen's license law,	78

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	14
Licenses granted,	12
Complaints investigated,	3

REPORT OF INSPECTOR JAMES W. EVANS, DISTRICT No. 8.

Boiler Inspection Law.

Boilers inspected internally, 170; externally, 61,	231
Defects found on boilers or air tanks,	103
Boilers or air tanks ordered repaired,	25
Appendages ordered, or defective appendages ordered repaired or replaced,	189
Number of boilers or air tanks on which hydrostatic pressure test was applied,	76
Number of boilers or air tanks on which maximum allowable pressure was reduced,	6

Air Tank Inspection Law.

Air tanks inspected,	6
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	378
Licenses granted: —			
First-class engineers,	—	5	5
Second-class engineers,	—	3	3
Third-class engineers,	23	—	23
Fourth-class engineers,	32	—	32
Steam-fire engineers,	1	—	1
First-class firemen,	35	—	35
Second-class firemen,	69	—	69
Specials to have charge of second-class plants,	—	3	3
Specials to have charge of third-class plants,	9	—	9
Specials to operate second-class plants,	1	—	1
Specials to operate third-class plants,	1	—	1
Total licenses granted,	171	11	182
Applicants rejected,	163	25	188

Number of examinations by Board of which I was a member,	84
Licenses exchanged,	67
Licenses suspended, 3; licenses revoked, 3,	6
Complaints investigated: engineers' and firemen's license law,	10
Prosecutions,	5
Fines imposed,	\$70

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	34
Licenses granted,	33
Applicants rejected,	1
Complaints investigated,	1

REPORT OF INSPECTOR EDWARD MORAN, DISTRICT NO. 9.

Boiler Inspection Law.

Boilers inspected internally, 116; externally, 243,	359
Defects found on boilers or air tanks,	31
Boilers or air tanks ordered repaired,	24
Appendages ordered, or defective appendages ordered repaired or replaced,	724
Number of boilers or air tanks on which hydrostatic pressure test was applied,	241
Number of boilers or air tanks condemned,	3
Complaints investigated,	5

Air Tank Inspection Law.

Air tanks inspected,	2
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	415
Licenses granted: —			
First-class engineers,	—	3	3
Second-class engineers,	—	11	11
Third-class engineers,	16	1	17
Fourth-class engineers,	5	—	5
Steam-fire engineers,	1	—	1
First-class firemen,	24	—	24
Second-class firemen,	79	1	80
Specials to have charge of third-class plants,	3	—	3
Specials to operate second-class plants,	2	—	2
Specials to operate third-class plants,	2	—	2
Total licenses granted,	132	16	148
Applicants rejected,	137	36	173

Number of examinations by Board of which I was a member,	161
Licenses exchanged,	56
Licenses suspended,	2
Complaints investigated: engineers' and firemen's license law.	32

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	8
Licenses granted,	2
Applicants rejected,	2

REPORT OF INSPECTOR STURGIS C. BAXTER, DISTRICT No. 10.

Boiler Inspection Law.

Boilers inspected internally, 167; externally, 111,	278
Defects found on boilers or air tanks,	18
Boilers or air tanks ordered repaired,	14
Appendages ordered, or defective appendages ordered repaired or replaced,	119
Number of boilers or air tanks on which hydrostatic pressure test was applied,	112
Number of boilers or air tanks on which maximum allowable pressure was reduced,	2
Number of boilers or air tanks condemned,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	385
Licenses granted: —			
First-class engineers,	—	2	2
Second-class engineers,	—	8	8
Third-class engineers,	10	3	13
Fourth-class engineers,	5	—	5
Portable engineers,	3	—	3
Steam-fire engineers,	1	—	1
First-class firemen,	31	—	31
Second-class firemen,	104	—	104
Specials to have charge of second-class plants,	—	7	7
Specials to have charge of third-class plants,	8	—	8
Specials to operate second-class plants,	2	—	2
Specials to operate third-class plants,	1	—	1
Total licenses granted,	165	20	185
Applicants rejected,	158	36	194

Number of examinations by Board of which I was a member,	150
Licenses exchanged,	5
Complaints investigated: engineers' and firemen's license law,	18

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	3
Licenses granted,	1
Applicants rejected,	2

REPORT OF INSPECTOR HERBERT A. SULLIVAN, DISTRICT NO. 11.

Boiler Inspection Law.

Boilers inspected internally, 222; externally, 207,	429
Defects found on boilers or air tanks,	310
Boilers or air tanks ordered repaired,	44
Appendages ordered, or defective appendages ordered repaired or replaced,	320
Number of boilers or air tanks on which hydrostatic pressure test was applied,	235
Number of boilers or air tanks on which maximum allowable pressure was reduced,	29
Number of boilers or air tanks condemned,	3
Complaints investigated,	3
Prosecutions,	1
Fines imposed,	\$20

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	361
Licenses granted:—			
First-class engineers,	—	3	3
Second-class engineers,	—	8	8
Third-class engineers,	16	—	16
Fourth-class engineers,	4	—	4
Portable engineers,	7	—	7
First-class firemen,	29	1	30
Second-class firemen,	80	—	80
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	10	—	10
Specials to operate third-class plants,	1	—	1
Total licenses granted,	147	16	163
Applicants rejected,	165	39	204

Number of examinations by Board of which I was a member,	110
Licenses exchanged,	374
Licenses suspended,	3

Complaints investigated: engineers' and firemen's license law,	21
Prosecutions,	5
Fines imposed,	\$95

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	6
Licenses granted,	6
Applicants rejected,	1

REPORT OF INSPECTOR PERCY B. BRAGDON, DISTRICT NO. 12.

Boiler Inspection Law.

Boilers inspected internally, 189; externally, 80,	269
Defects found on boilers or air tanks,	225
Boilers or air tanks ordered repaired,	27
Appendages ordered, or defective appendages ordered repaired or replaced,	377
Number of boilers or air tanks on which hydrostatic pressure test was applied,	111
Number of boilers or air tanks on which maximum allowable pressure was reduced,	21
Number of boilers or air tanks condemned,	2
Complaints investigated,	2

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	446
Licenses granted: —			
First-class engineers,	—	8	8
Second-class engineers,	—	13	13
Third-class engineers,	23	—	23
Fourth-class engineers,	10	—	10
Portable engineers,	6	—	6
First-class firemen,	33	—	33
Second-class firemen,	77	—	77
Specials to have charge of second-class plants,	—	4	4
Specials to have charge of third-class plants,	12	—	12
Specials to operate second-class plants,	4	—	4
Specials to operate third-class plants,	2	—	2
Total licenses granted,	167	25	192
Applicants rejected,	200	30	230

Number of examinations by Board of which I was a member,	109
Licenses exchanged,	207
Complaints investigated: engineers' and firemen's license law,	14

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	13
Licenses granted,	10
Applicants rejected,	2
Complaints investigated,	1

REPORT OF INSPECTOR JAMES B. DESHAZO, DISTRICT NO. 13.

Boiler Inspection Law.

Boilers inspected internally, 108; externally, 48,	156
Defects found on boilers or air tanks,	271
Boilers or air tanks ordered repaired,	16
Appendages ordered, or defective appendages ordered repaired or replaced,	229
Number of boilers or air tanks on which hydrostatic pressure test was applied,	59
Number of boilers or air tanks on which maximum allowable pressure was reduced,	16
Number of boilers or air tanks condemned,	9
Complaints investigated,	5

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	455
Licenses granted:—			
First-class engineers,	—	2	2
Second-class engineers,	—	3	3
Third-class engineers,	14	1	15
Fourth-class engineers,	21	—	21
Portable engineers,	14	—	14
First-class firemen,	45	2	47
Second-class firemen,	132	—	132
Specials to have charge of second-class plants,	—	2	2
Specials to have charge of third-class plants,	3	—	3
Specials to operate second-class plants,	2	—	2
Total licenses granted,	231	10	241
Applicants rejected,	170	28	198

Number of examinations by Board of which I was a member,	77
Licenses exchanged,	79
Licenses suspended, 1; licenses revoked, 3,	4
Complaints investigated: engineers' and firemen's license law,	38
Prosecutions,	2

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	8
Licenses granted,	6
Applicants rejected,	3
Complaints investigated,	1

REPORT OF INSPECTOR HERBERT E. MITCHELL, DISTRICT NO. 14.

Boiler Inspection Law.

Boilers inspected internally, 111; externally, 56,	167
Defects found on boilers or air tanks,	163
Boilers or air tanks ordered repaired,	21
Appendages ordered, or defective appendages ordered repaired or replaced,	156
Number of boilers or air tanks on which hydrostatic pressure test was applied,	96
Number of boilers or air tanks on which maximum allowable pressure was reduced,	14
Complaints investigated,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	333
Licenses granted:—			
First-class engineers,	—	3	3
Second-class engineers,	—	3	3
Third-class engineers,	14	—	14
Fourth-class engineers,	14	—	14
Portable engineers,	3	—	3
Steam-fire engineers,	1	—	1
First-class firemen,	24	—	24
Second-class firemen,	71	—	71
Specials to have charge of second-class plants,	—	3	3
Specials to have charge of third-class plants,	8	—	8
Specials to operate second-class plants,	1	—	1
Specials to operate third-class plants,	2	—	2
Total licenses granted,	138	9	147
Applicants rejected,	157	38	195

Number of examinations by Board of which I was a member,	82
Licenses exchanged,	184
Licenses revoked,	1

Complaints investigated: engineers' and firemen's license law,	5
Prosecutions,	4
Fines imposed,	\$10

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	3
Licenses granted,	3

REPORT OF INSPECTOR FREEMAN H. SANBORN, DISTRICT No. 15.

Boiler Inspection Law.

Boilers inspected internally, 66; externally, 83,	149
Defects found on boilers or air tanks,	10
Boilers or air tanks ordered repaired,	5
Appendages ordered, or defective appendages ordered repaired or replaced,	275
Number of boilers or air tanks on which hydrostatic pressure test was applied,	94
Number of boilers or air tanks on which maximum allowable pressure was reduced,	8
Number of boilers or air tanks condemned,	2
Complaints investigated,	4

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	290
Licenses granted: —			
Third-class engineers,	19	-	19
Fourth-class engineers,	18	-	18
Portable engineers,	12	-	12
First-class firemen,	21	-	21
Second-class firemen,	84	-	84
Specials to have charge of second-class plants,	-	2	2
Specials to have charge of third-class plants,	8	-	8
Specials to operate second-class plants,	1	2	3
Total licenses granted,	163	4	167
Applicants rejected,	94	19	113

Number of examinations by Board of which I was a member,	74
Licenses exchanged,	319
Licenses revoked,	1
Complaints investigated: engineers' and firemen's license law,	17

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	13
Licenses granted,	13
Complaints investigated,	2

REPORT OF INSPECTOR ARTHUR F. LOVERING, DISTRICT No. 16.

Boiler Inspection Law.

Boilers inspected internally, 58; externally, 124,	182
Defects found on boilers or air tanks,	6
Boilers or air tanks ordered repaired,	7
Appendages ordered, or defective appendages ordered repaired or replaced,	158
Number of boilers or air tanks on which hydrostatic pressure test was applied,	122
Number of boilers or air tanks on which maximum allowable pressure was reduced,	14
Number of boilers or air tanks condemned,	1
Complaints investigated,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	131
Licenses granted: —			
Third-class engineers,	2	—	2
Fourth-class engineers,	1	—	1
Portable engineers,	2	—	2
First-class firemen,	5	—	5
Second-class firemen,	17	—	17
Specials to have charge of third-class plants,	3	—	3
Specials to operate second-class plants,	1	—	1
Total licenses granted,	31	—	31
Applicants rejected,	96	8	104

Number of examinations by Board of which I was a member,	81
Licenses exchanged,	63
Complaints investigated: engineers' and firemen's license law,	36

Operators of Hoisting Machinery.

Complaints investigated,	1
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REPORT OF INSPECTOR FRANKLIN L. FORBUSH, DISTRICT No. 17.

Boiler Inspection Law.

Boilers inspected internally, 138; externally, 214,	352
Defects found on boilers or air tanks,	46
Boilers or air tanks ordered repaired,	30
Appendages ordered, or defective appendages ordered repaired or replaced,	248
Number of boilers or air tanks on which hydrostatic pressure test was applied,	281
Number of boilers or air tanks on which maximum allowable pressure was reduced,	13
Number of boilers or air tanks condemned,	1
Prosecutions,	1

Air Tank Inspection Law.

Air tanks inspected,	2
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	214
Licenses granted: —			
Second-class engineers,	-	1	1
Third-class engineers,	7	-	7
Fourth-class engineers,	14	-	14
Portable engineers,	6	-	6
First-class firemen,	6	-	6
Second-class firemen,	45	1	46
Specials to have charge of second-class plants,	-	3	3
Specials to have charge of third-class plants,	15	-	15
Specials to operate second-class plants,	2	-	2
Specials to operate third-class plants,	4	-	4
Total licenses granted,	99	5	104
Applicants rejected,	99	13	112

Number of examinations by Board of which I was a member,	39
Licenses exchanged,	57
Licenses suspended, 2; licenses revoked, 5,	7
Complaints investigated: engineers' and firemen's license law,	9

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	7
Licenses granted,	2
Applicants rejected,	5

REPORT OF INSPECTOR GEORGE E. RICHARDSON, DISTRICT No. 18.

Boiler Inspection Law.

Boilers inspected internally, 146; externally, 168,	314
Defects found on boilers or air tanks,	155
Boilers or air tanks ordered repaired,	52
Appendages ordered, or defective appendages ordered repaired or replaced,	806
Number of boilers or air tanks on which hydrostatic pressure test was applied,	242
Number of boilers or air tanks on which maximum allowable pressure was reduced,	20
Number of boilers or air tanks condemned,	1
Complaints investigated,	1
Prosecutions,	2
Fines imposed,	\$30

Air Tank Inspection Law.

Air tanks inspected,	1
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	199 .
Licenses granted: —			
First-class engineers,	-	1	1
Second-class engineers,	-	1	1
Third-class engineers,	3	1	4
Fourth-class engineers,	4	-	4
Portable engineers,	2	-	2
Steam-fire engineers,	1	-	1
First-class firemen,	2	-	2
Second-class firemen,	36	-	36
Specials to have charge of second-class plants,	-	1	1
Specials to have charge of third-class plants,	15	-	15
Specials to operate second-class plants,	3	-	3
Specials to operate third-class plants,	1	-	1
Total licenses granted,	67	4	71
Applicants rejected,	113	14	127

Number of examinations by Board of which I was a member,	35
Licenses exchanged,	48
Licenses suspended, 2; licenses revoked, 1,	3
Complaints investigated: engineers' and firemen's license law,	9

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	2
Licenses granted,	1
Applicants rejected,	1
Complaints investigated,	1

REPORT OF INSPECTOR FRANK C. HINCKLEY, DISTRICT NO. 19.

Boiler Inspection Law.

Boilers inspected internally, 106; externally, 107,	213
Defects found on boilers or air tanks,	306
Boilers or air tanks ordered repaired,	102
Appendages ordered, or defective appendages ordered repaired or replaced,	979
Number of boilers or air tanks on which hydrostatic pressure test was applied,	159
Number of boilers or air tanks on which maximum allowable pressure was reduced,	13
Complaints investigated,	2
Prosecutions,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	349
Licenses granted: —			
First-class engineers,	-	2	2
Second-class engineers,	-	1	1
Third-class engineers,	1	-	1
Fourth-class engineers,	2	-	2
Portable engineers,	4	1	5
First-class firemen,	7	-	7
Second-class firemen,	44	-	44
Specials to have charge of second-class plants,	-	5	5
Specials to have charge of third-class plants,	3	-	3
Total licenses granted,	61	9	70
Applicants rejected,	238	35	273

Number of examinations by Board of which I was a member,	89
Licenses exchanged,	111
Complaints investigated: engineers' and firemen's license law,	48

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	3
Licenses granted,	1
Applicants rejected,	2

REPORT OF INSPECTOR BENJAMIN S. WATERMAN, DISTRICT No. 20.

Boiler Inspection Law.

Boilers inspected internally, 134; externally, 121,	255
Defects found on boilers or air tanks,	216
Boilers or air tanks ordered repaired,	19
Appendages ordered, or defective appendages ordered repaired or replaced,	218
Number of boilers or air tanks on which hydrostatic pressure test was applied,	131
Number of boilers or air tanks on which maximum allowable pressure was reduced,	11
Number of boilers or air tanks condemned,	2

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	225
Licenses granted:—			
First-class engineers,	—	4	4
Second-class engineers,	—	8	8
Third-class engineers,	11	1	12
Fourth-class engineers,	13	—	13
Portable engineers,	6	—	6
Steam-fire engineers,	2	—	2
First-class firemen,	26	—	26
Second-class firemen,	60	—	60
Specials to have charge of second-class plants,	—	7	7
Specials to have charge of third-class plants,	12	—	12
Specials to operate second-class plants,	8	—	8
Specials to operate third-class plants,	2	—	2
Total licenses granted,	140	20	160
Applicants rejected,	58	7	65

Number of examinations by Board of which I was a member,	76
Licenses exchanged,	30
Complaints investigated: engineers' and firemen's license law,	6

Operators of Hoisting Machinery.

Applications received for license as operators of hoisting machinery,	2
Licenses granted,	2

REPORT OF INSPECTOR WILLIS A. HARLOW, SPECIAL DUTY.

Boiler Inspection Law.

Boilers inspected internally, 46; externally, 807,	853
Defects found on boilers or air tanks,	7
Boilers or air tanks ordered repaired,	4
Appendages ordered, or defective appendages ordered repaired or replaced,	1,215
Number of boilers or air tanks on which hydrostatic pressure test was applied,	795
Prosecutions,	3
Fines imposed,	\$100

Air Tank Inspection Law.

Air tanks inspected,	5
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	33
Licenses granted: —			
Third-class engineers,	5	-	5
Steam-fire engineers,	1	-	1
First-class firemen,	6	-	6
Second-class firemen,	5	-	5
Specials to have charge of third-class plants,	1	-	1
Total licenses granted,	18	-	18
Applicants rejected,	12	-	12

Number of examinations by Board of which I was a member,	13
Licenses exchanged,	107
Licenses revoked,	1
Complaints investigated: engineers' and firemen's license law,	16
Prosecutions,	1

Operators of Hoisting Machinery.

Complaints investigated,	1
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REPORT OF INSPECTOR HARRY E. MORTON, SPECIAL DUTY.

Boiler Inspection Law.

Boilers inspected internally, 11; externally, 3,	14
Boilers or air tanks ordered repaired,	2
Appendages ordered, or defective appendages ordered repaired or replaced,	21
Number of boilers or air tanks on which hydrostatic pressure test was applied,	6
Number of boilers or air tanks on which maximum allowable pressure was reduced,	1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	—	—	3
Licenses granted: —			
Third-class engineers,	2	—	2
Fourth-class engineers,	1	—	1
Portable engineers,	1	—	1
Steam-fire engineers,	2	—	2
Second-class firemen,	1	—	1
Total licenses granted,	7	—	7
Applicants rejected,	9	—	9

Number of examinations by Board of which I was a member,	37
Licenses exchanged,	640
Complaints investigated: engineers' and firemen's license law,	1
Prosecutions,	1

Operators of Hoisting Machinery.

Licenses granted,	2
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REPORT OF INSPECTOR WILBERT E. SIMM, SPECIAL DUTY.

Boiler Inspection Law.

Boilers inspected internally, 66; externally, 21,	87
Defects found on boilers or air tanks,	99
Boilers or air tanks ordered repaired,	12
Appendages ordered, or defective appendages ordered repaired or replaced,	114

Number of boilers or air tanks on which hydrostatic pressure test was applied,	29
Number of boilers or air tanks on which maximum allowable pressure was reduced,	8

Air Tank Inspection Law.

Air tanks inspected,	1
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Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Applications received,	-	-	25
Licenses granted: —			
Third-class engineers,	2	-	2
Fourth-class engineers,	2	-	2
First-class firemen,	5	-	5
Second-class firemen,	24	-	24
Specials to have charge of third-class plants,	2	-	2
Total licenses granted,	35	-	35
Applicants rejected,	92	4	96

Number of examinations by Board of which I was a member,	176
Licenses exchanged,	196
Licenses suspended,	2
Complaints investigated: engineers' and firemen's license law,	7

Operators of Hoisting Machinery.

Licenses granted,	1
Applicants rejected,	1

REPORT OF INSPECTOR FRANKLIN G. WRIGHT, SPECIAL DUTY.

Boiler Inspection Law.

Boilers inspected internally, 10; externally, 12,	22
Defects found on boilers or air tanks,	18
Boilers or air tanks ordered repaired,	1
Appendages ordered, or defective appendages ordered repaired or replaced,	28
Number of boilers or air tanks on which hydrostatic pressure test was applied,	8

Air Tank Inspection Law.

Air tanks inspected, 1

Engineers' and Firemen's License Law.

	By Individual Examiner.	By Board of Examiners.	Total.
Licenses granted: —			
Second-class engineers,	—	1	1
Third-class engineers,	4	—	4
Fourth-class engineers,	2	—	2
First-class firemen,	7	—	7
Second-class firemen,	23	—	23
Specials to operate third-class plants,	1	—	1
Total licenses granted,	37	1	38
Applicants rejected,	21	—	21

Number of examinations by Board of which I was a member, 136

Licenses exchanged, 124

Complaints investigated: engineers' and firemen's license law, 2

Operators of Hoisting Machinery.

Licenses granted, 1

Applicants rejected, 1

Complaints investigated, 1

GENERAL SUMMARY OF BOILER AND AIR TANK INSPECTIONS.

INSPECTORS.	Total Number of Boilers inspected.	Boilers inspected internally.	Boilers inspected externally.	Total number of Air Tanks inspected.	Defects found on Boilers or Air Tanks.	Boilers or Air Tanks ordered repaired.	Appendages ordered, or defective Appendages ordered repaired or replaced.	Number of Boilers or Air Tanks on which Hydrostatic Pressure Test was applied.	Number of Boilers or Air Tanks on which Maximum Allowable Pressure was reduced.	Number of Boilers or Air Tanks condemned.	Complaints investigated, Boiler Inspection or Air Tank Law.	Prosecutions for Violation of Boiler Inspection or Air Tank Law.	Fines imposed for Violation of Boiler Inspection or Air Tank Law.
Baxter, Sturgis C.,	278	167	111	-	13	14	119	112	2	1	1	-	-
Braddon, Percy B.,	269	189	80	-	225	27	377	111	21	2	2	-	\$26 50
Bushek, Henry,	310	134	176	-	261	14	222	99	12	2	22	-	-
DeSaazo, James B.,	156	108	48	-	271	16	229	59	16	9	5	-	-
Evans, James W.,	231	170	61	6	103	25	189	76	6	-	-	-	-
Ferguson, Charles,	220	99	121	-	53	11	200	132	-	-	-	-	-
Forbush, Franklin L.,	352	138	214	2	46	30	248	281	13	1	1	-	-
Harlow, Willis A.,	853	46	807	5	7	4	1,215	795	-	-	-	3	100 00
Hinckley, Frank C.,	213	106	107	5	306	102	979	159	13	-	2	1	-
Kearney, John B.,	275	73	202	3	21	20	133	205	12	-	41	-	-
Loving, Arthur F.,	192	58	124	-	18	7	158	122	14	1	1	-	-
Macintosh, George D.,	382	154	238	-	163	9	527	264	6	-	9	-	-
Michelli, Herbert E.,	167	111	56	-	163	21	156	96	14	-	1	-	-
Moran, Edward,	359	116	243	2	31	24	724	241	-	3	5	-	-
Mores, Edward A.,	394	286	108	-	75	52	636	128	10	8	1	-	-
Morton, Harry E.,	14	3	11	-	-	2	21	6	1	-	-	-	-
Ramsay, William W.,	292	123	169	-	256	23	141	162	8	1	2	-	30 00
Richardson, George E.,	314	146	168	1	155	52	806	242	20	1	1	-	-
Sanborn, Freeman H.,	149	66	83	-	10	5	275	94	8	3	4	-	-
Starr, Wilbert E.,	87	66	21	1	99	12	114	29	8	-	-	-	-
Skoglund, Charles,	510	226	284	2	759	70	970	286	27	2	-	3	25 00
Sullivan, Herbert A.,	499	222	207	-	310	44	320	235	29	3	3	1	20 00
Waterman, Benjamin S.,	255	134	121	-	216	19	218	131	11	2	-	-	-
Wright, Franklin G.,	22	10	12	1	18	1	28	8	-	-	-	-	-
Totals,	6,723	2,959	3,764	23	3,427	604	8,995	4,073	251	32	100	12	\$201 50

GENERAL SUMMARY OF EXAMINATIONS.

ENGINEERS' AND FIREMEN'S LICENSE LAW.

INSPECTORS.	LICENSES GRANTED. ¹													Applicants rejected.
	First-class Engineers.	Second-class Engineers.	Third-class Engineers.	Fourth-class Engineers.	Portable Engineers.	Steam-fire Engineers.	First-class Firemen.	Second-class Firemen.	Specials to have charge of Second- class Plant.	Specials to have charge of Third- class Plant.	Specials to operate Second-class Plant.	Specials to operate Third-class Plant.	Total Licenses granted.	
Baxter, Sturgis C.,	2	8	13	5	3	1	31	104	7	8	2	1	185	194
Braddon, Percy B.,	2	13	23	10	6	1	33	77	4	12	4	2	192	230
Bushek, Henry, B.,	3	2	8	4	1	-	7	28	5	3	1	-	66	88
DeShazo, James W.,	3	3	15	21	14	-	47	132	2	7	2	-	241	198
Evans, James W.,	5	3	23	32	-	1	35	69	3	9	1	1	182	188
Ferguson, Charles,	2	1	13	8	-	2	21	48	3	4	1	-	102	130
Forbush, Franklin L.,	2	1	7	14	6	2	6	46	3	15	2	4	104	112
Harlow, Willis A.,	-	1	5	-	-	1	6	5	3	1	-	-	18	12
Hinckley, Frank C.,	2	1	1	2	5	-	7	44	5	3	-	-	70	273
Kearney, John B.,	1	2	11	-	-	-	18	37	4	8	2	-	83	216
Lovering, Arthur F.,	3	6	15	1	2	-	5	17	-	3	1	-	31	104
Mackintosh, George D.,	3	3	15	8	3	2	21	40	4	3	1	-	107	222
Mitchell, Herbert E.,	3	3	14	14	3	1	24	71	-	3	2	2	147	195
Moran, Edward,	3	11	17	5	3	1	24	80	-	3	2	-	173	148
Mores, Edward A.,	6	14	15	3	6	2	40	188	-	10	3	-	291	266
Morton, Harry E.,	-	2	2	1	1	2	-	1	4	4	-	-	7	9
Ramsay, William W.,	6	10	22	16	2	4	35	56	8	15	1	-	175	104
Richardson, George E.,	1	1	4	4	2	1	2	36	1	15	3	1	71	127
Sauborn, Freeman H.,	-	-	10	18	12	-	21	84	2	8	3	-	167	113
Shinn, Wilbert E.,	-	-	2	2	-	-	5	24	4	2	-	-	35	96
Skoglund, Charles,	8	6	3	5	3	2	27	74	4	7	2	1	172	195
Sullivan, Herbert A.,	3	8	316	4	7	-	30	80	4	10	-	1	163	204
Waterman, Benjamin S.,	4	8	12	13	6	2	26	60	7	12	8	2	160	65
Wright, Franklin G.,	-	1	4	2	-	-	7	23	-	-	-	1	38	21
Totals,	62	102	296	192	80	22	478	1,424	72	166	43	18	2,955	3,535

¹ Including licenses granted either by individual examiners or boards of examiners.

GENERAL SUMMARY OF EXAMINATIONS—Concluded.

INSPECTORS.	ENGINEERS' AND FIREMEN'S LICENSE LAW — Con.						OPERATORS OF HOISTING MACHINERY LAW.				
	Number of Examinations by Board of which I was a Member.	Licenses exchanged.	Licenses suspended.	Licenses revoked.	Complaints investigated: Engineers' and Firemen's License Law.	Prosecutions for Violation of Engineers' and Firemen's License Law.	Fines imposed.	Applications received.	Licenses granted.	Applicants rejected.	Complaints investigated.
Baxter, Sturgis C.,	150	5			18			3	1	2	1
Braddon, Percy B.,	109	207			14			13	10	2	
Bushick, Henry,	56	83			47			1	1	3	1
DeShazo, James B.,	77	79			38			8	6		
Evans, James W.,	84	67			10		\$70 00	34	33	1	1
Ferguson, Charles,	93	19			11			5	5		
Forbush, Franklin L.,	39	57			9			7	2	5	
Harlow, Willis A.,	13	107			16			3	1	2	1
Hinckley, Frank C.,	89	111			43			6	5		
Kearney, John B.,	106	105			72		20 00	3	1	1	
Lovering, Arthur F.,	81	63			36			6	5		
Macintosh, George D.,	147	43			78			14	12		1
Mitchell, Herbert E.,	82	184			5		10 00	3	3		3
Moran, Edward,	161	56			32			8	2	2	
Mores, Edward A.,	102	78			23			11	11		3
Morton, Harry E.,	37	640			1			5	5		
Ramsay, William W.,	58	48			26			3	5		1
Richardson, George E.,	35	48			9			2	2	1	2
Sanborn, Freeman H.,	74	319			17			13	13	1	
Simn, Wilbert E.,	176	196			14			3	2	1	
Skoglund, Charles,	116	42			21			6	6	1	
Sullivan, Herbert A.,	110	374			6		95 00	6	6	2	
Waterman, Benjamin S.,	76	30			2			2	2	1	1
Wright, Franklin G.,	136	124			2			1	1		
Totals,	2,207	3,086	20	21	560	19	\$195 00	147	125	22	18

Respectfully submitted,

GEORGE A. LUCK,
Deputy Chief.

MISCELLANEOUS MATTERS.

MISCELLANEOUS MATTERS.

DISPOSITION OF FORFEITED LIQUORS.

In accordance with the provisions of section 80, chapter 100, Revised Laws, I have received certain liquors, and the packages containing the same, from the various officers whose duty it has been to forward them to me, as Chief of this Force, such liquors and packages having been seized and forfeited by virtue of said statute; and my receipt has been given for the same. There were 1,066 such seizures during the year; the quantity of the liquors received being as follows:—

Spirituous liquors,	. . .	2,556 gallons, 5 quarts, 1 pint, 1 gill.
Malt liquors,	. . .	9,061 gallons, 2 quarts, 1 gill.

Such portion of these liquors as were of value for medicinal purposes were disposed of to hospitals and individuals for such use only, the balance having been sold to the distillery for the extraction of the alcohol contained therein.

As there has been no opportunity for the disposal of the malted liquors, except as beverages, they have been emptied into the sewer.

After the payment of the transportation and other charges incurred in connection with the storage and handling of such liquors and packages, the net proceeds resulting from such sales, amounting to \$1,600, have been paid to the Treasurer of the Commonwealth.

DISPOSITION OF CONFISCATED WEAPONS.

The provisions of section 2, chapter 583, Acts of 1908 require that any pistol, revolver or other weapon confiscated by order of the court shall be forwarded by common carrier to the Chief of this Force, who may sell or destroy the same, and in case of a sale, after paying the cost of forwarding, he shall pay over the net proceeds to the Treasurer of the Commonwealth.

In accordance with such provisions I received during the year from various officers of the Commonwealth, whose duty it has been to forward the same, the following, and I have notified the respective court or justice of my receipt thereof:—

Revolvers,	90
Knives,	7
Slung shots,	3
Brass knuckles,	1

The weapons enumerated above have been sold (with the exception of six knives, three slung shots, and one brass knuckles, which have been destroyed), and the net proceeds (\$47) have been paid to the Treasurer of the Commonwealth.

AMOUNTS PAID TO THE TREASURER OF THE COMMONWEALTH.

The following amounts have been paid to the Treasurer of the Commonwealth by the District Police Force during the fiscal year ending Nov. 30, 1914, such amounts representing the fees received with the applications and for the respective services named, and the net proceeds from the sale of forfeited liquors, and of confiscated weapons:—

Applications for approval of entertainments to be given upon the Lord's day,	\$8,604 00
Applications for elevator licenses,	2 00
Applications for engineers' and firemen's licenses,	6,335 00
Applications for hoisting machinery operators' licenses,	150 00
Applications for moving-picture machine operators' licenses,	1,685 00
Assistant moving-picture machine operators' permits,	550 00
Confiscated weapons,	47 00
Forfeited liquors,	1,600 00
Inspections of air tanks,	78 00
Inspections of boilers,	21,449 20
Inspections of moving-picture machines,	546 00
Inspections of moving-picture machine booths,	416 00
Permissions for special exhibitions of moving pictures,	858 00
Renewal of moving-picture machine operators' licenses,	690 00
Total,	<hr/> \$43,010 20

APPROPRIATIONS AND EXPENDITURES.

The respective amounts appropriated for the salaries and expenses of this Force, and the amounts expended therefrom, are specified in the following statement: —

DETAIL.	Appropriations.	Expenditures.	Amount unexpended.
Salary of the Chief of the District Police, . . .	\$3,000 00	\$3,000 00	—
Salaries of the first clerk, second clerk and stenographer.	3,450 00	3,445 83	\$4 17
Salaries of six stenographers in branch offices, .	3,850 00	3,805 97	44 03
Salary of storekeeper,	450 00	450 00	—
Contingent office expenses,	11,000 00	10,545 72	454 28
Salaries of deputy chief and members of the detective department.	49,150 00	48,145 99	1,004 01
Salaries of stenographers and clerk of the detective department.	4,600 00	4,600 00	—
Traveling expenses of members of the detective department.	15,750 00	15,697 20	52 80
Special services and expenses in the investigation of fires.	2,500 00	2,485 87	14 13
Expenses of steamer "Lexington,"	9,500 00	9,475 27	24 73
Regulation of explosives,	3,331 05	2,923 95	407 10
Salaries of deputy chief and members of the building inspection department.	33,400 00	32,367 80	1,032 20
Salaries of stenographers of the building inspection department.	1,450 00	1,440 80	9 20
Traveling expenses of members of the building inspection department.	8,550 00	7,900 06	649 94
Expenses in connection with moving-picture apparatus.	600 00	448 28	151 72
Salaries of deputy chief and members of the boiler inspection department.	43,300 00	43,112 99	187 01
Salaries of stenographers of the boiler inspection department.	2,850 00	2,819 76	30 24
Traveling expenses of members of the boiler inspection department.	12,150 00	12,215 76 ¹	—
Expenses in connection with boiler apparatus, .	1,000 00	994 43	5 57
Compensation of members of the Board of Boiler Rules.	1,000 00	1,000 00	—
Expenses of the Board of Boiler Rules,	1,350 00	1,017 20	332 80
Expenses in connection with the enforcement of laws relative to the waters of the Commonwealth.	12,000 00	—	12,000 00
Totals,	\$224,231 05	\$207,892 88	\$16,403 93


¹ Balance transferred from extraordinary expenses.

CONCLUSION.

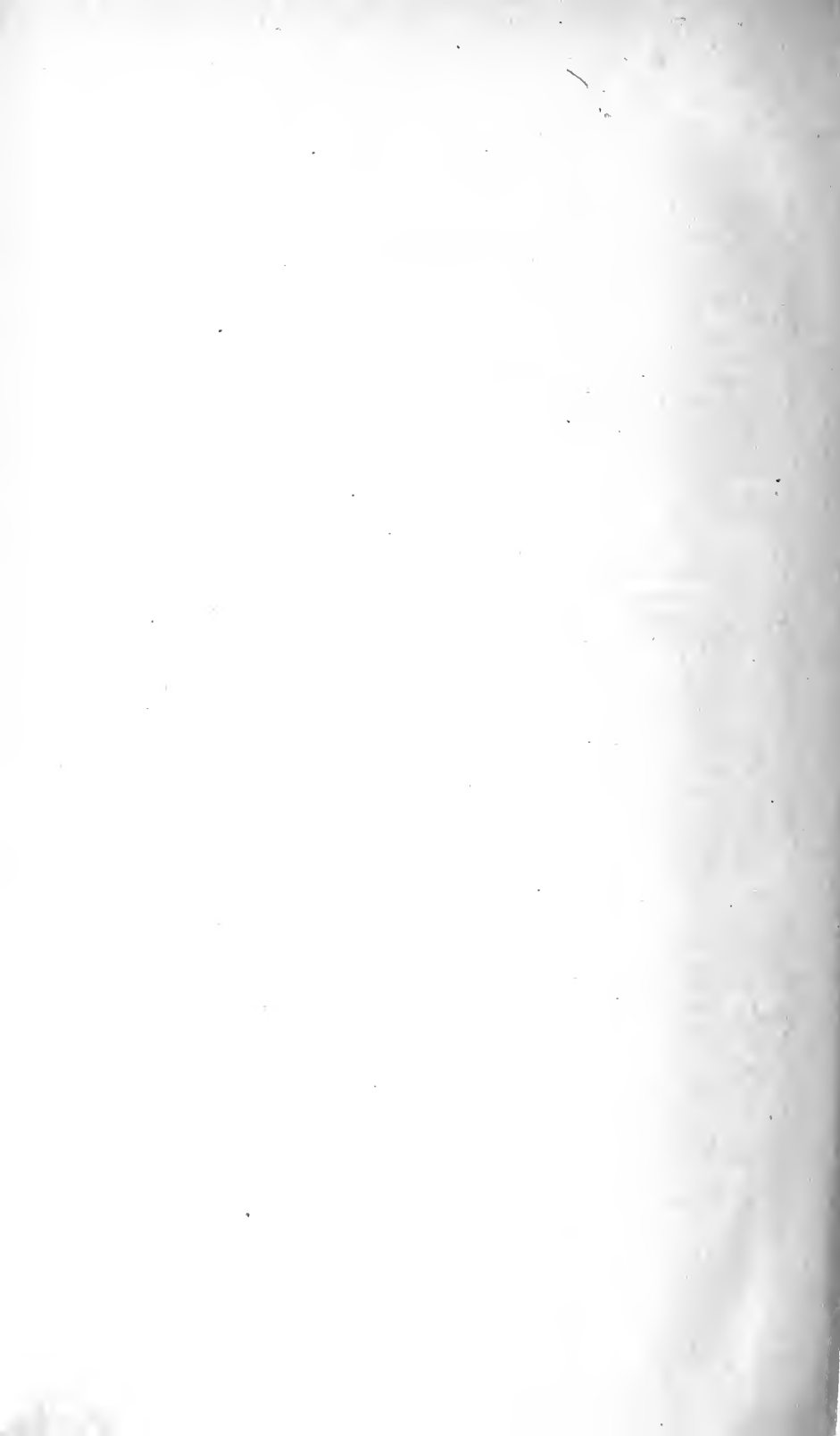
In closing this report I desire to record my gratitude for the encouragement and cordial support rendered me by Your Excellency in connection with the performance of my duties.

I also desire to acknowledge my indebtedness to the Attorney-General and his assistants for their advice in the interpretation of the statutes, and otherwise, for my guidance.

Respectfully submitted,


Chief.

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